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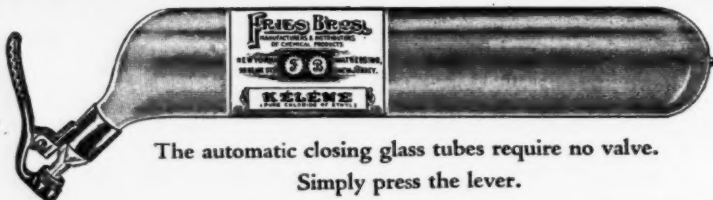
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Francis P. Garvan

Clinical Medicine

A Monthly Postgraduate Course

Vol. 32, No. 3

March, 1925

Francis P. Garvan

THOSE of us who have read Daedalus, the wise and witty little book of J. B. S. Haldane, have had held up to our astonished gaze a picture of what may be accomplished by chemistry for the good of men during the next few decades. Whether we accept as more probable the optimistic predictions of Haldane or the pessimistic ones of Bertrand Russell, most of us believe that we are now on the threshold of a new era; that the revelations of science will revolutionize our industries, our professional life, perhaps even the economic and social structure of society itself.

In this country we believe that America must play a major role in the great drama of the future, yet few are really doing thoughtful constructive work along strictly scientific lines, to make the new world a better world. One great American, who is trying to do this is Francis P. Garvan, whose picture appears in this issue of CLINICAL MEDICINE.

Francis P. Garvan was born at East Hartford, Conn., June 13, 1875. He graduated at Yale in 1897, and from the New York Law School in 1899. From 1900 to 1910 he was Assistant District Attorney in the city of New York. In 1910 he married Mabel Brady, daughter of Anthony N. Brady.

With the outbreak of the war Garvan became manager of the New York office of the Alien Property Custodian, and it devolved upon him to untangle the web of

intrigue through which a great German trust had secured control of the chemical industry in this country. Mr. Garvan's revelations showed the danger of dependence upon a foreign power for our chemicals. To save the industry from destruction The Chemical Foundation was created by order of President Wilson, and Mr. Garvan was selected president, an office which he still holds. When A. Mitchell Palmer was appointed Attorney General, Mr. Garvan succeeded him as Alien Property Custodian.

Since the war Francis P. Garvan has devoted his life to the advancement of chemistry, working in the main through The Chemical Foundation. The charter of the Foundation provides, among other things, that all its income in excess of 6 percent on its capital stock shall be devoted to educational purposes. Unfortunately, its income has been absorbed in litigation forced upon it by the Government, but, nevertheless, Mr. Garvan has "carried on," the funds required for his educational propaganda coming to a considerable extent out of his own pocket. His educational work has been mainly popular in character, but directed, in the last analysis, to creating in America what Arthur D. Little, in his Franklin Institute address, called "the fifth estate."

"This fifth estate," says Mr. Little, "is composed of those having the simplicity to wonder, the ability to question, the power

to generalize, and the capacity to apply. It is, in short, the company of thinkers, workers, expounders and practitioners, upon whom the world is absolutely dependent for the preservation and advancement of that organized knowledge which we call science."

Mr. Garvan realizes that, in the creation of such an "estate," organization is necessary as well as education, and his plan includes the creation and support of a self-sustaining industry; back of this industry, well-equipped and heavily endowed educational institutions; back of these, stimulation in our youth of the creative spirit; and, behind it all, the sympathy and support of the people.

This is a gigantic program, but it is being carried through with quite remarkable results. Through its control of German chemical patents, the Foundation is doing much to save the industry from absorption by foreign interests. Also, Mr. Garvan has encouraged the investment of millions in the endowment and equipment of chemical department in our universities. The youth of the country have been given an interest in chemistry by a series of prize contests carried on by the American Chemical Society with funds supplied by Mr. Garvan and his wife. Finally, several books on chemistry have been published by the Foundation and distributed at cost to thousands of readers.

The latest of these books is a splendid work on "Chemistry in Industry," by H. E. Howe, editor of *The Journal of Industrial and Engineering Chemistry*. Other books, now in preparation and soon to be published, are: "Chemistry in Agriculture" and "Chemistry in Medicine." These will be placed in every library of importance in the country, and will reach thousands of homes.

It is fortunate for the country that Garvan is a fighting man. Although he was handicapped by expensive litigation, and subjected to the open and insidious attacks of those interested in perpetuating the German monopoly in this country, he never faltered. He continued to fight on. It took great courage to do this, and the average man would have given way. But Garvan is not an average man. To him this fight for American chemistry is a real crusade; and such, in very truth, it is; for there can be no doubt that the future of our country, and the progress of the whole world, depend more upon scientific research into the mysteries of nature and the applica-

tion of the results of this research to the problems of mankind, than upon any other cause. Sometime, I predict, the world will realize the debt it owes to this man.

ANTITOXIN FOR NOME

Late in January and early in February, the newspapers made quite a feature of the race against time and death which was made by relays of dog-teams in the far north, which carried antitoxin to Nome, where an epidemic of diphtheria had caught them unprepared.

Two or three interesting lines of thought emerge from this story.

Many of us can remember the time when antitoxin was an experiment. Now it is recognized by all, except certain irregular practitioners and fanatics of the antivaccination class, as being the sole rational and specific treatment for diphtheria. Another antitoxin is now on trial — that of the Dick's, against scarlatina—and, while we should guard against unreasoning enthusiasm until its value is established, it will do no harm to remember the story of diphtheria antitoxin.

People in general look with such confidence to the medical profession for relief that they frequently forget the untiring labors of the research workers and the patient experimentation of clinicians which are hastening the progress of medical science today, the same as they have done in the past. The romance of progress is not dead. The people who have had cases of diphtheria in their families and have seen the antitoxin used realize its remarkable power; but, others are likely to forget and take it for granted. It is well that their interest should be stimulated.

Doctors and patients who live within telephonic reach of a well-stocked pharmacy are prone to overlook the dangers and struggles of their brethren who are holding the frontiers of civilization. It does them good to have the fact dramatically impressed upon them that many of the advantages which they look upon as their commonplace rights are really inestimable privileges.

One of the dispatches stated that the small amount of antitoxin on hand in Nome was long past the expiration date stamped on the packages, but was used in the emergency and produced good results. We are so accustomed to having just what we want, just when we want it, that there

are some physicians who, if they found that the antitoxin which was readily available was past the date, would wait until they could get some that was fresh. These should remember that, in the treatment of diphtheria, *time* is one of the main elements in success; and that the only change which takes place in antitoxins with the passage of time is a very gradual loss of strength. When you need antitoxin, give that which can be obtained with the *least loss of time*; and, if it is a little old, simply increase the dose somewhat.

It isn't so much what happens to you, but what you think about it, the way you meet it, the mental attitude toward it that you develop, that counts in the long run.—Wm. E. Towne.

SCARLATINA

For many years scarlatina has been one of the most dreaded of the infectious diseases of childhood; first, because of the severity of the symptoms and the frequency with which serious complications occurred and, second, because, even with our modern methods of investigation, which succeeded, years ago, in bringing diphtheria under control, the organism of scarlatina had not been discovered.

The day when this disease, which is said to have claimed more victims among doctors and nurses than any other infection, will be prevented and cured by modern serological methods appears to have dawned.

The discovery that the caustic organism of scarlatina is a specific strain of the hemolytic streptococcus was made almost simultaneously by Dr. A. R. Dochez of New York, and Drs. G. F. and G. H. Dick of Chicago, but the Dicks seem to have gone further and faster with their investigation than has the New York physician.

Feeling that our readers should have all the information available upon this vital topic, we requested Dr. Dick to prepare an article, but, due to press of other duties he was unable to do this.

We then prevailed upon Dr. J. F. Biehn, who is thoroughly familiar with the subject, to prepare a paper, and this he did, following a careful study of the growing literature of the subject.

Dr. Biehn's paper was then submitted for comment and corrections to Dr. Dick, and the article, as it appears on page 163 of this number, embodies such alterations as he made in the original manuscript.

Every general practitioner, internist and

pediatrician should familiarize himself with what has been and is being done in this field so as to be able to assist in every possible way in the extensive investigations which will now be necessary to perfect the method.

We don't begin to bank as we might on the fact that Nature can be relied upon.—A. S. Duryea.

CAN WE BELIEVE OUR EYES?

The eye is the essential organ of vision, but other organs enter into the complex mechanism of what we perceive as sight to such an extent that the answer to the above question is not so easy as it seems.

As a matter of fact, we never really see anything. What we actually see is a tiny, inverted image of the thing at which we are looking, impressed upon the retina according to the laws of optics. Even then, before we experience the sensation of sight, this retinal impression must travel over various nerve paths before it reaches the sight-center in the cerebral cortex; and about what may happen to it on its travels we know very, very little.

A normal man, looking at a tree, will tell you it is green. A color-blind man, looking at the same tree, will say it is red. There is no anatomical difference in the two eyes, but something has happened to the *message* while it was in process of being delivered to the brain.

We all know that the irritation of the trunk of any sensory nerve will be interpreted as pain or other sensation, in the normal peripheral distribution of that nerve. We also know that the shock to the nerve fibers, occasioned by a blow upon the head, is frequently *visualized* as points of light—the man “sees stars.”

Sometimes we meet a stranger on the street whose gait or carriage is reminiscent of some friend or acquaintance. Very frequently this suggestion will call up a vivid image of the friend, which is projected out in front by our consciousness, and then looked at objectively, so that we really seem to see the absent friend. The stranger's resemblance to the friend need not be particularly striking in order to produce this effect.

It is now well understood by oculists that persons who have an uncorrected error of refraction, particularly an astigmatism, see the world distorted, and not as it appears to those with normal eyes.

We can do a good deal to correct physical errors of vision, *when we know that they exist*, and, under the same circumstances, we can check and regulate the psychic factors which enter into our visual perception of the world around us, but we cannot do this unless we recognize that there are such factors.

The practical applications of all this are, that we should not be too serenely confident of the reality of all that we think we see, considering that so many emotional, mechanical and other factors of possible error may enter into the impression; and that, when we are engaged in making scientific observations, we should be especially careful that our mental attitude is one of clear, dry and impartial professional neutrality, untinged by our own desires and emotions; for, otherwise, we may see what we expect, or desire to see, instead of what is actually present.

Boredom is a symptom of hardening of the mind.
—Bishop Masterman.

SPORTS AND VACATIONS

Several thousands of years ago there lived a mighty old Hebrew who was one of the greatest hygienists that ever lived. His name was Moses.

Among the other wise and salutary decrees which he promulgated in the name of God (the names of physiology and common sense having no particular status at that time, and really being, in the ultimate analysis, the same thing, anyway) was one to the effect that one day in every seven should be spent in entire rest from every ordinary occupation. The devotional exercises, in which the day was to be spent, served valuable purposes, no doubt, but, in the character and magnitude of their effects on the life and health of the people, were probably secondary to those produced by the physiological benefits of rest and change.

Most men in business life today can, if they choose, follow the mandate of the old Hebrew philosopher, but the active physician is not among this number. His week consists of seven full days, and his working day of twenty-four hours, during which time his duties are frequently onerous and his responsibilities always heavy.

To the physician, therefore, above men in almost any other branch of human service, reasonably frequent and regular periods of rest and change are absolutely necessary to the maintenance of the highest efficiency.

As our work is very largely mental, predominantly sedentary, and always among people, it follows that the most complete change and relaxation may be obtained by spending our rest-periods out of doors, engaged in active, physical pursuits, and somewhere in the wilderness, away from people.

We hope that every one of our readers has some out-door hobby, and that he is now making plans to ride it as soon as the weather becomes favorable, and one of the purposes of this editorial is to see if we cannot persuade each one of you to help all the others to do that riding in the most efficient manner.

Tennis, golf, croquet, and such sports depend wholly on personal skill, and no man's *advice* can help us. On the other hand, hunting, fishing, motoring (especially touring), camping, canoeing, and such like, depend, to a large extent, on knowledge which can be imparted, and upon external surroundings.

Let every sportsman who indulges in any of the beneficent occupations mentioned, come across and tell us how, when, where and why he finds such pursuits superior to all others and how they may be followed to the best advantage.

We want *technic*—details of equipment, localities, and how you *do* things, so that other men can make use of your experience—and therefore those who fish in their imaginations and tour in an overstuffed arm chair are barred.

Out of the many practical and helpful letters we receive, we will *try* to select a few of the *most* practical and helpful and, after boiling them down to their absolute nutritious juices, will publish them in "The Leisure Hour" during the spring and summer months.

P. S.: We are just as eager as ever for professional suggestions, in the form of concise, but accurate and detailed case histories and other matters of a practical and usable character.

Exceptional bargains in stocks do not, as a rule, need to be advertised.—Dawes.

PLAYING THE MARKET

The average physician probably doesn't have to employ the services of a certified accountant in making up his Income Tax report (we're trying to obviate that necessity by the information which will be found

under *Clinical Notes and Practical Suggestions*), but he does save some money, and, seeing how hard he works to earn it, it seems a shame when he is skinned out of it.

Doctors are proverbially poor business men, and this is quite natural, seeing that their whole lives are spent in scientific and humanitarian, rather than in commercial pursuits. Incidentally, a business organizer recently told us that there is a general practitioner, here in Chicago, who is doing a business of 35 to 40 thousand dollars a year, and losing two-thirds of the just and proper financial rewards of that service because he has neither the time nor the inclination to look after the economic end of the business.

Seeing the fiduciary reserve grow with such painful slowness, and reading stories in the papers of men who have become wealthy over night in Wall Street, the temptation to "take a flyer" is sometimes very great. This is especially true when there is a wild bull market like the recent one in wheat.

In this connection there are at least three things to be remembered:

1.—When the upward rush in the price of any stock gets into the newspapers, the time for making fabulous fortunes in that stock is past. The men who make the "killings" are the "insiders", who knew that the bull movement was coming several weeks or days before it happened.

2.—The stories of the men who made the big winnings are featured on the front pages under big headlines; while the sad histories of the little fellows who were wiped out are printed in small type on the inside pages—if at all!

3.—"Playing the Market" is the same sort of pastime as poker. If you have a certain sum of money that you feel you can afford to "invest" in a poker game, and want to use it in the stock-market, why, go ahead. If not, keep out. That does not mean that a man should never buy sound and seasoned stocks for investment. Some of them are fine; but, get the advice of your banker or someone who *knows* before you do even that, and then *buy* the stocks outright and salt them down in your safe-deposit box. Playing margins is dangerous any way it breaks. If you lose, your money is gone; and, if you win, there is danger that you may get the habit, after which it is only a question of time when your fleece will line the pockets of the fellows

who do this sort of thing for a living.

You can't beat a man at his own game—not consistently.

The reward of success is not idleness; it is the knowledge and power and opportunity to do bigger things.—*Dental Digest*.

NEW USES FOR OLD DRUGS

You all remember the story about the man who traveled far to see a certain famous forest, and returned, much disappointed, with the statement that he had been unable to see the forest on account of the multitude of trees.

It frequently happens that the most obvious things are overlooked because of the very fact that they are obvious—that they are so close by and so commonplace as to seem scarcely worthy of closer consideration.

In the time of our fathers and grandfathers, the tomato was grown in the flower garden, as a purely ornamental plant, called the love-apple, and was believed to be extremely poisonous. Someone had the temerity to try an experiment with the fruit, one day, and now it is one of our most esteemed and valuable comestibles.

When many of us were in school the only known use for phenolphthalein was as an indicator in chemical tests, and the only place it was found was in chemical laboratories; now it is one of the most widely used laxative drugs.

We have all known for years that tartar emetic was a sure and prompt producer of emesis, and most of us have been in the habit of using it to a considerable extent as an expectorant. It now seems that the field of usefulness of our old friend is to be considerably widened; just how wide it will prove to be no one knows, very accurately, we imagine, at the present time. An abstract on page 194 of this issue gives an idea of the work which is being done, and suggests further clinical experimentation.

It is highly probable that a number of our readers have found new uses for old remedies, and have been using them in these new ways for considerable periods of time, without realizing that they had worked out anything novel. We hope that any such will consider this an invitation to give their professional brethren the benefit of their experiences. Make your reports brief but definite and full of detail.

Here is a fertile field for clinical research but, like other and more material fields, it cannot be cultivated without labor. Study

your drugs until you *know* them, with all their powers and limitations, for only so will you be able to visualize new possibilities for their use; and in so doing, bear in mind that, although the fields of physiotherapy, psychotherapy, vaccine therapy, *et al*, are widening every day, the possibilities which inhere in a profound and thoughtful study of the domain of chemistry are only beginning to dawn upon us, and the end of such research is, at present, beyond the limit of the most vivid imagination.

Sir, my concern is not whether God is on our side; my great concern is to be on God's side, for God is always right.—Abraham Lincoln.

TYPHOID FEVER

They've been having a tidy little epidemic of typhoid in Chicago, the last couple of months, and there have been some cases in New York, also. The cause, this time,, is believed to be polluted oysters; but nothing can change the primary fact that, barring the laboratory worker who might swallow a culture of *B. typhosus*, the man who contracts typhoid has been eating excrement in one form or another.

Sanitation has done an enormous deal to reduce the prevalence of typhoid; but, in spite of all that, there is scarcely a busy physician, in general practice, who doesn't see at least one or two cases every year; and the salient fact emerges that there is only one class of people in the United States who do not have typhoid at all—the members of the Regular Army.

In 1898 there were assembled at Chickamauga Park, Georgia, under field conditions, about 20,000 soldiers, among whom there occurred, during the six months or so of the camp, about 3000 cases of typhoid, with several hundred deaths.

In 1911, at about the same season of the year, there were assembled at San Antonio, Texas (which is in approximately the same

latitude as Chickamauga Park), about the same number of troops, for about the same period of time. In that camp *not one case* of typhoid developed. Two cases were imported, but there was no spread.

It is true that the San Antonio Camp was much better sanitized than the Chickamauga camp, but that alone would not account for such a startling contrast.

What happened was this: During 1910, experiments had been carried on, by the army, in the immunization of volunteers by injecting killed cultures of *B. typhosus* subcutaneously, and the results had been so gratifying that, in the San Antonio camp, it was decided to immunize every member of the camp as a routine procedure.

The results of this experiment are the more striking when we realize that the camp was largely made up of men in late adolescence or early adult life—the age at which the incidence of typhoid is highest.

The writer, during nearly fifteen years of service in the army, beginning about the time when the experiments in typhoid immunization were started, in the course of which time he handled thousands of patients, never saw *one case* of typhoid.

Reports are beginning to come in which indicate that the incidence of this disease in the civil population is now decidedly higher in women than in men, due, beyond question, to the large proportion of our young men who were immunized during the war.

Sanitation has greatly lessened the danger from smallpox and typhoid; so, by all means, let us sanitize to the utmost of our ability; but no physician, today, would feel that he had done his duty to his patients and his community if he failed to use his full influence to secure universal protection against smallpox by means of vaccination. It appears to us that the time has now come when similar efforts should be inaugurated to secure universal typhoid protection.

Leading Articles

The Functions of the Medical School

By WALTER DILL SCOTT, Ph.D., Evanston, Ill.

President of Northwestern University.

EARLY in 1924, a special committee was appointed to study the Medical School of Northwestern University, in order to definitely formulate what, exactly, were the purposes of the school, and to determine how well and how fully these purposes were being carried out.

This committee consisted of E. P. Lyon, M.D., Dean of the School of Medicine, University of Minnesota; A. I. Kendall, Ph.D., D.P.H., recently Dean of the School of Medicine, Northwestern University; Charles M. Mayo, M.D., of Rochester, Minn.; Horace Secrist, A.M., Ph.D., Professor of Economics, Northwestern University; R. A. Kent, A.M., Ph.D., Dean of the College of Liberal Arts, Northwestern University.

While many of the conclusions reached by this committee were of value only, or chiefly, to the faculty of the University, it is believed that some of their findings will prove of interest to physicians in general, and such findings are set forth below.

The primary object of a medical school is the development of high-grade general practitioners. In addition to the undergraduate department, there should be a graduate school for the training of specialists both in the preclinical and clinical branches, and a postgraduate school to which practitioners could come for short courses in the various clinical departments.

The number of men thoroughly trained in pathology is becoming alarmingly smaller, because remuneration for work in this branch, as in the other fundamental branches of medicine, is far less than that obtainable in the successful practice of the profession. The more brilliant men of each graduating class are attracted to practice rather than to teaching and research. There is a very real danger, therefore, that in the future the departments of pathology and of the fundamental branches will, of necessity, fall into the hands of mediocre or poorly-qualified men; and the teaching of students and the advancement of medical research will suffer accordingly.

The chief methods by which the objectives are to be realized are teaching, demonstration and research, through lectures, laboratories, clinics, and hospitals. One objective is not to be reached by one method or one device. That method is best which, most effectively and most economically reaches the end desired. Evolution of clinics, teaching, lectures, etc., must be made in terms of the respective values in bringing desired goals near. The primary matter is to determine what the school considers that it should seek to do. Only after that is determined can the organization, administration and general instructional devices be correctly evaluated.

The committee is of the opinion that the primary objective of medical education—the training of general practitioners—should receive special emphasis at this time. The need for general practitioners of curative medicine is critical. In certain geographical areas there are whole counties without a single resident physician. Such places are virgin fields for quackery and medical chicanery of the most deplorable kind.

On the other hand, urban centers are tending to be overspecialized. In some centers an individual finds considerable difficulty in locating a general practitioner at all. It may not be difficult to find a diagnostician, a specialist for eye and ear, or nose and throat, another for the lungs, one for the heart, an "internal medicine" man, a surgeon, or a foot-specialist; but a general practitioner is difficult to locate.

The above is not in the least an overstatement. Just how typical it is, it is impossible to state. The fact that it exists at all is an indication of a condition which should receive the careful attention of those who train medical workers. No professional school can know whether it is discharging its duty unless it keeps in constant contact with the field that it seeks to serve. Constant study of the needs of this field, and modification of content and methods of training to meet these needs, are merely the

identification marks of a first-class school of medicine.

In this connection, it is quite pertinent to add that, along with training general practitioners, an objective of increasingly urgent merit is the training of individuals to practice preventive medicine.

It is not to be supposed that the training in these two lines should not be united in one individual. Quite the contrary is true. The general practitioner should receive more training in preventive medicine, and seek constantly to apply this training. On the other hand, it is to be expected that, for a considerable time to come, there will be, in practice, a clear division as to the emphasis on the part of any individual, at a given time.

The public needs, and is using, an increasing number of persons trained specifically to practice preventive medicine.

Another objective which should not be lost sight of is the training for health service which the School of Medicine should provide for students in the College of Liberal Arts and in the Graduate School.

This can be illustrated from the experience of one of our universities. In this university, the medical school enrolls approximately 500 medical students. For some years, however, it has opened its courses

to properly qualified students from other departments of the university who desire to enroll. It cooperates with that university's School of Education in the study of special and typical children. Its courses in physiology, bacteriology, and anatomy are among those patronized by students from different departments of that university.

The result is that last year 1100 students were regularly enrolled in courses in the School of Medicine, whose primary enrollments were in other schools of the university. Because of this fact, that medical school has decided that its library can be best used to the advantage of everyone concerned, by moving it to the general University Library.

Every effort should be made, by means of elective courses, or by any other practicable methods to:

1. Make the student give thought to his program and to his choice of subjects, thus fostering responsibility.
2. Allow some variety in teaching and add interest both for teachers and students.
3. Lead often to research and the development of investigators.
4. Develop teachers. Assistants and instructors come chiefly from the group of students who become interested in particular phases of medicine through the electives.

Producing a Superior Race

By CASPER L. REDFIELD, Chicago, Illinois

(Third Paper)

A CHILD gets the measles, and in due time he recovers. After recovery he is immune from further attack.

Here is a well-known situation which needs a little consideration. Before being attacked by measles, he did not have the power to resist that attack. If he had had the power necessary to resist, he would not have come down with the disease. After recovery, he has a power he did not have before.

This new power is an acquired character within the strict meaning of that term. It is not any structural thing you can see with the eye. You cannot tell by looking at a child whether he can or cannot resist an attack of measles. Neither can you tell by any physical test other than subjecting him to an attack. Resistance to measles is strictly a matter of power.

Is this acquired immunity inherited by the children of parents who have had measles? The average person will say "no," and point to the fact that each generation of children has measles, just as previous generations had it. But, is this strictly true? Not every child of each generation contracts measles. Some escape entirely, and others suffer very much. Up to the present there is no evidence to show that the child who escapes is not the offspring of parents who suffered severely, and that the one who suffers severely is not the offspring of parents who escaped. We must look elsewhere for information on this point.

Measles is not a dangerous disease to white children whose ancestors for generations have been subjected to it, but it is very dangerous to people of other races when they are first brought into contact

with it. For example, when measles was introduced into the Fiji Islands, in 1875, about one-fourth of the entire population died in about three months. This means adults as well as children.

But, the white child does not escape serious consequences because he is white. The Faroe Islands are located in the North Sea, and belong to Denmark. The population is Scandinavian, with a small amount of British blood. Up to 1846, there were no recorded cases of measles in those islands. In that year, "within six months after the arrival of a single case of measles, more than three-fourths of the entire population were attacked, and many perished."

When a person is vaccinated, he acquires immunity against smallpox. An attempt to vaccinate him again, soon after a previous vaccination, results in nothing. But, wait ten or twenty years, and if he is vaccinated again it will "take." What happens is that, when he is vaccinated the first time, he develops a resistance to vaccine virus which amounts to immunity. But as the years go by, that resistance gradually declines, and after a time he can be vaccinated again. The decline in the power of resisting vaccine virus is the same in character as the decline in physical powers which an athlete experiences when he takes up a sedentary life.

It is with measles as it is with vaccination. A child contracts the disease, and, in fighting that disease, he develops a resistance which amounts to immunity. But, as the years go by, that resistance gradually declines. When he becomes a parent, his offspring inherits the degree of resistance that the parent had when the child was conceived, and not the resistance which that parent had twenty or thirty years previously. We count the child lucky if he can avoid the measles, and we overlook the fact that the next generation will suffer just so much more. Dodging measles, for three or four generations, would bring about the condi-

tions which existed in the Faroe Islands in 1846.

The reaction of the race to tuberculosis is substantially the same as the reaction to measles. The disease is always present in ordinary communities, and particularly frequent in congested communities. People living in such communities are continually subjected to light attacks, and autopsies show that ninety percent or more of the adults who died from other causes had had tuberculosis and had recovered. The process of having attacks of tuberculosis and recovering from them is a form of vaccination, and this vaccination is making the race immune by the inheritance of the acquired resistance. For example, Sir Robert Philip says that, in Scotland, in 1870, the death rate from tuberculosis was 404 per 100,000; and in 1920 it had fallen to 124 per 100,000.

But no such resistance is developed among any race of people who do not go through the process of being attacked by the disease and overcoming it. Metchnikoff, who studied the question in Siberia where the disease is unknown, said that "very many of the young men and women who migrated from this clean country into the big cities died of acute and rapid tuberculosis." During the late war, the Senegalese, who are "without tuberculosis in their native condition and were found to be free from tuberculosis on reaching France, developed in large number an acute and fatal form of tuberculosis in spite of the hygienic measures enforced by the army authorities." (Sir David Bruce at Toronto, Aug. 6, 1924.)

Karl Pearson made a study of tuberculosis at the Crossley Sanatorium, Frodsham, England, which is of interest to us here. He found 381 patients with tuberculosis. He found out whether those patients were first, second or other children, and also found out the total number of children in each of the families from which those patients came. This gave him a direct comparison by which he could determine

TABLE XIII
Tuberculosis by Birth Order
Data by Karl Pearson

Child	Normal Number	Observed Number	Relative Resistance
First	67.1	113	1.000
Second	64.4	79	1.375
Third and Fourth	109.4	93	1.984
Fifth to Seventh	95.3	75	2.211
Eighth and Later	41.8	21	3.365
	381.0	381	

which children of those families suffered most from tuberculosis. I reproduce Pearson's table in condensed form, together with my calculation of the relative resistance of the different children. Table XIII.)

The first column of figures in this table means that, out of each 381 persons in the families from which these patients came, there were 67.1 first children, 64.4 second children, and so on. The second column, however, shows that in the sanatorium there were 113 patients who were first children, 79 were second children, and so on. The last column assumes unity as the resistance of the first child, whence the relative resistance of the other children is in the figures given. Putting the last column into a diagram, we have Fig. 9.

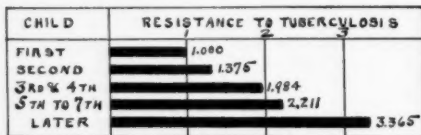


Fig. 9. Relative resistance to tuberculosis found in different children of the same families. Data by Karl Pearson.

A later child of a family does not have greater resistance to tuberculosis simply because he has older brothers and sisters. His greater resistance comes from the fact that his parents were older when he was produced than they were when his elder brothers and sisters were produced. And it is not mere age which makes the difference. The parents of the families involved lived where they were subjected to attacks of tuberculosis from which they recovered, as is shown by autopsies that the great majority of persons do; and the older a person is when his children are produced, the greater is the probability that he will have been subjected to an attack and will have recovered. When Pearson's data are subjected to calculation and applied to known facts, it is seen that they mean the inheritance of acquired resistance to tuberculosis.

In Table VII I gave a record which shows that, when cows are regularly bred and regularly milked, they increase in milk-producing power up to a late age in life. We cannot make a similar table for bulls, because bulls do not produce milk. Yet, cows and bulls have the same parents. One kind of offspring inherits this power in active form, and the other kind does not. It is a thing with which we are all perfectly familiar, yet the majority of persons would be much puzzled if asked to explain why.

I will not go into the matter here, but will say that the power of producing milk is what Darwin called a "secondary sexual character," that is, without being actually sexual, it belongs to one sex and not to the other. A peculiarity about secondary sexual characters is that they develop in animals only after sexual maturity. The power of producing milk is developed in females only after sexual maturity, and is inherited only by female offspring. In man, the power of growing a beard is developed only after sexual maturity, and is inherited only by male offspring. And so on for many other characteristics.

I have found that the same thing applies in the same way to many other powers, and will illustrate what I have to say by reference to trotters. Horses are trained both before and after sexual maturity. By reference back to Table I (CLIN. MED., Dec., p. 841), it will be seen that sometimes there is a very great development after sexual maturity. By analyzing the progeny of both males and females developed for many years before being bred, I find that development acquired in males after maturity is transmitted to sons but not to daughters, and development acquired in females after maturity is transmitted to daughters and not to sons. We are now in a position to analyze some experiments made by Dr. Charles R. Stockard of New York, and described in *The American Naturalist* for February and March, 1916.

Stockard subjected guinea pigs to the fumes of alcohol to the point of intoxication, six days per week for considerable periods of time. He then bred those pigs. Some of the pigs were treated in this way for five years or more, but, unfortunately, he does not tell us how long particular parents were subjected to the treatment before being bred. As he got three or four generations in five years, we have to assume it to be about a year or less. But it is clear that Stockard subjected those animals to alcohol *after* they were mature and *before* they were bred.

Stockard says: "The mucosa of the respiratory tract is considerably irritated during the early stages of the treatment, but develops a resistance so that later little effect can be noticed. The cornea of the eye is greatly irritated, . . . but this clears later and the animal is again able to see."

At a later date, MacDowell, at Cold Spring Harbor, subjected white rats to the same kind of treatment by alcohol. MacDowell began by subjecting the rats to alcohol

TABLE XIV
Stockard's Table Rearranged
(Percentages)

Treated with Alcohol	Mortality at Birth		Deformed at Birth	
	Males	Females	Males	Females
Father	15.90	23.25	2.27	4.65
Paternal G-Father	27.27	39.47	8.33	10.52
Maternal G-Father	32.35	40.62	2.64	12.50
Mother	8.10	4.34		
Paternal G-Mother	32.43	30.30	5.40	9.30
Maternal G-Mother	21.74	22.22	8.60	

vapor for 30 minutes per day for 7 days. Then he measured the amount of treatment by the reactions of the animals. Next he raised the treatment until they were "obviously under the influence" of the fumes. "Subsequently the rats were left each day until they were completely anesthetized. This required from three to four hours for the older rats."

The things to be noted in these two cases are that alcohol is a poison which injures the organs of the animal with which it comes in contact; that animals which are continually subjected to this poison gradually develop powers of resisting the action of the poison; and that a considerable amount of this acquired development comes after the animals are sexually mature. The thing we are looking for here is the inheritance of this developed power of resistance, and particularly that part which comes after maturity and should be transmitted to offspring by sex.

In some of his experiments, Stockard alcoholized both parents; in others he treated only one parent; in still others he treated both parents through two or more generations; in yet others he treated only one grandparent, and so on in many combinations. He gives the percentages of mortality and deformed in the progeny, and other items relating to defects. For our present purposes we will rearrange one of his tables so as to show effects when only one ancestor was treated. (See Table XIV.)

It is to be observed that when the father only was alcoholized, the daughters suffered more than the sons; and when the mother only was alcoholized, the sons suffered more than the daughters. Or, stated in the other way, when the father was the parent alcoholized, the sons had greater resistance to

the injuries of alcohol than did the daughters; and when the mother was alcoholized, the daughters had greater resistance than the sons. Also, this same relationship extended to the grandparents. To get a better view of this matter we will condense the mortality part of the previous table, and then put this condensation into a diagram.

TABLE XV
Condensation of Stockard's Table
(Percentages)

Treated with Alcohol	Mortality Among Offsprings	
	Males	Females
Father	15.90	23.25
G-Fathers	30.06	40.04
Mother	8.10	4.34
G-Mothers	27.08	26.26

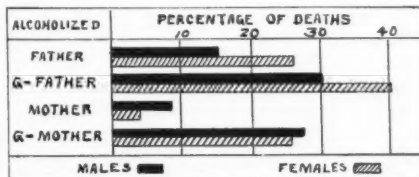


Fig. 10. Inheritance by sex of acquired resistance to injury by alcohol. Data by Charles R. Stockard.

Stockard was impressed by the difference in descendants of different sexes, but his mind ran to the inheritance of defects produced by the environment rather than to the inheritance of the resistance developed by combatting the poison. Speaking of descent from males he said: "The female offspring from alcoholized males are actually worse than the male offspring in the following respects: their mortality record, the frequency of deformities, and the quality of the young to which they give rise." The acquired resistance was transmitted by sex.

The Treatment and Prevention of Colds with Metaphen

By EDWARD C. SULLIVAN, M.D., Springfield, Massachusetts

THE most common ailment with which mankind is afflicted is a "cold in the head." A recent survey made by the United States Public Health Service showed that about ninety percent of the people in the country suffered from this during the winter months, and of this ninety percent there was an average of 1.7 colds per year, with some patients having as many as three or four attacks. They also felt that there was some relation between the prevalence of colds in the head and influenza.

The remedies for this affliction are legion, extending from the old-fashioned coryza tablet to sprays—oily and aqueous—chlorine gas, recently, and all sorts of patent medicines. Their large number simply advertises the fact that none of them are of any great value. It has always seemed to me that, theoretically, they had very little *raison d'être*, and practice has borne this out. Either they had no action at all, or they gave a very fleeting result which had little effect in cutting short the duration of the infection—and we must accept the fact that a cold in the head is an infection—and, if we expect to get favorable results, must treat it somewhat as we would an infection elsewhere.

Spraying the nose with oil containing epinephrin, menthol, camphor or what not; dosing with physic in small repeated doses; loading up with belladonna, codeine, quinine, or aconite may give some temporary relief, but it can have very little effect on the causative organism. What is indicated in these cases is something which will kill the organism, relieve the congestion, be unirritating to the mucosa, nonstaining, and, at the same time, not be too much trouble for the patient to use or interfere with his occupation. Metaphen, 1-5000 solution, seems to fill these requirements.

I regret that I must make this article somewhat personal but, as the original experience with this product was purely personal, there is no way to avoid it. It has been my misfortune to be the victim of two, three, or even four colds every winter so that one was practically continuous with the preceding. In December 1923, one of my regulation colds in the head started, infected my antrum and sinuses, brought on the usual bronchitis, and grew steadily

worse so that, at the end of about two weeks, bed was beginning to be attractive to me. A culture made at this time showed the infecting organism to be the *Streptococcus viridans*.

I had been trying out metaphen in my urological work and, as I had found it to be unirritating, the idea came to me that it might possibly have a beneficial effect on my nasal mucosa, and I was desperate enough to try anything.

Method of Using Metaphen

With this forlorn hope in view, I instilled a medicine dropperful of metaphen 1-5000 into each nostril and, to my surprise and gratification, experienced immediate relief. The mucus loosened up and, at the end of ten minutes, the nose was blown very gently and another dose administered, this time on a comparatively bare mucosa. My nasal passages opened up at once, just as if epinephrin had been used, but *they stayed open*. The application was continued every hour or so during the afternoon and evening and by night most of the tight feeling in my head had disappeared and the general malaise was much less pronounced. Two applications, ten minutes apart, just before retiring, insured a good night's sleep with both nostrils open all night, so that in the morning I felt greatly relieved. By continuing this treatment for two days, my cold in the head was gone and also the bronchitis began to clear up; and in four days I was entirely well.

Naturally, I was interested in this "miracle" and began to try it on my friends and patients who happened to have a cold in the head. Since that time I have used it on upwards of one hundred cases with exactly the same results in all but three. Also a few times since then, it has seemed to me that I was contracting a cold in the head, but a few applications of metaphen cleared it up promptly so that it looked as if it had been a false alarm. This has also been the experience of several of my friends and patients under like conditions. In other words, if used early—at the first symptoms—the cold never develops.

Metaphen in 1-5000 solution seems not only to kill the infection but also to deplete the turgid mucosa, which permits the

sinuses to drain properly, relieving the stuffed feeling in the head. Furthermore, by killing the infecting organisms, one is not breathing a reinfection into the lungs with every breath, so that the bronchitis or tracheitis begins to clear up.

It is my experience that, to get the best results, it is important to start with the two applications, ten minutes apart, and then continue every hour or two according to the severity of the cold. I also believe that

generosity in the amount used at each treatment is important, and that it is well to warn the patient not to blow the nose directly after using, and very gently later.

The two applications, ten minutes apart, just before retiring, insure a comfortable night, which helps to build up the resistance of the patient to the infection. It is apparently an absolute preventative if used at the very first appearance of symptoms of a cold in the head.

The Rhinological Phases of Asthma

By BURTON HASELTINE, M.D., F.A.C.S., Chicago

IN the first article of this series (CLINICAL MEDICINE, August 1924), referring to the literature of bronchial asthma, it was stated that no plan or method had been found enabling the physician to undertake the treatment of any given case of asthma with any assurance of success. I am now able to modify that statement and name one remarkable exception.

In an article by Hollender, of Chicago, on "Prevention and Cure of Hayfever and Asthma" (*J. Ophthal., Otol. & Laryng.*, Aug. 1924) occurs a casual reference to the view expressed by Adam in 1901 that asthma results from two factors—a toxemia and a lesion in the respiratory tract. Such an expression naturally attracted my attention, and from Doctor Hollender I learned that Dr. James Adam of Glasgow published, in 1913, a book called "Asthma and Its Radical Treatment." I was not able to obtain the book in this country but have procured a copy from the London publisher. (Henry Kimpton, 263 High Holburn, W. C.)

It is difficult to understand why Doctor Adam's work has been so neglected by the profession. It has produced practically no impression in this country and little, if any, abroad. In the light of our experience we can say that, had his work received the attention it merits, it would have marked an epoch in the long struggle with the asthma problem. On the basis of an experience less extensive but partly antedating our own, he reached conclusions and obtained results remarkably similar. His general diagnostic and therapeutic technic was less perfect than that now available, and his rhinological technic was crude, indeed, but he nevertheless obtained results so good that they are today astonishing to anyone who has not confirmed them by

personal experience. As we have elsewhere remarked, it is not accidental that the rhinologist has gone farther toward the solution of the asthma problem than the pathologist. Doctor Adam's work was primarily as a rhinologist, but at all times in close association with the field of general medicine. His plan of treatment was to remove a toxemia which he found in all cases, and to correct nasal pathology which he found in very many. His success was in direct proportion to the completeness with which he could do these two things. After fifteen years' experience in treating asthma by these methods, his conviction is expressed in the following sentence: "It is unfortunate that the current idea among general practitioners as to asthma is that it is incurable; for there is no distressing and disabling diseased condition more amenable to correct handling than asthma."

The Rhinologist's Part of the Problem

The position of the rhinologist is affected by this conception of asthma in two distinct ways: He is placed in a peculiarly strategic position because the successful treatment of asthma is impossible without his aid; but there is placed upon him a responsibility of the gravest magnitude. This responsibility is a double, even a treble one if we may so express it. It demands his utmost skill in diagnosis, in prognosis, and in treatment. Not even second to the work of the internist is the importance of the rhinologist's skill in determining the amount and nature of nasal pathology, with its exact causal relationship, and his efficiency in removing or correcting it.

The first step in acquiring adequate diagnostic skill is a sort of re-inventory of the usual diagnostic methods. This does not

mean the discarding of any method, but a certain shifting of emphasis and the addition of some measures not commonly employed. First, we would place more careful, detailed and *repeated* direct study of the interior of the nose by anterior and posterior rhinoscopy, which includes the use of the nasopharyngoscope in skilled hands. A rhinological diagnosis without this instrument, or by one unpracticed in its use, is much like an ophthalmological diagnosis with similar neglect of the ophthalmoscope. Second would be a lessening of emphasis upon the x-ray picture. There is much need for this change. The psychology of picture-taking has greatly impressed the layman and the rhinologist is not immune to its allurements. He is too much inclined to lean upon it to the neglect of more valuable measures.

If we were compelled to begin cutting down the number of our diagnostic resources, this would probably be the first to go, unless it be transillumination which is perhaps of even less value. In doubtful sphenoid cases, the skiagraph does give information not otherwise obtainable and in frontals it is sometimes helpful. In ethmoids it is of little use, while in questions of antral pathology, now that we have the antroscope, the x-ray becomes quite useless except to reveal infection of dental origin.

Antral Infection

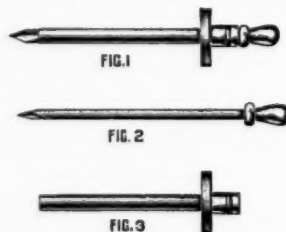
Just here there is need for another important shifting of emphasis and that is in our attitude toward antral infection. The discovery of antral empyema is generally regarded as a diagnosis in itself, and remedial measures are directed to this as a primary condition, whereas it is nothing of the kind. It is true, of course, that many cases have advanced to the stage where antral infection exists that will itself require treatment, but it is also true that this infection was originally an extension either from a periodontal or from an ethmoid-frontal pathology and if the primary condition remains, antral treatment will accomplish little. Hence the many prolonged tedious and futile courses of antral irrigation which are often promptly terminated by proper ethmoid treatment.

Many asthma patients are in this category. It is common to find asthmatics who have had antrum operations without relief in whom the cleaning up of a neglected ethmoid infection stops both the bronchospasm and the antral discharge. The re-

lation of antral empyema to bronchospasm is the same as that of any other focal infection and its removal will benefit only by the lessening of the toxic load. It thus differs from the ethmoid infection which is both a toxic focus and a direct inciter of the spasm. An understanding of this distinction is important.

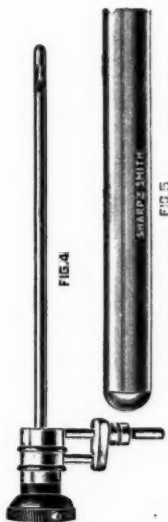
Antroscopy

Naturally, before making a definite prognosis or undertaking treatment in any case, it is desirable to know the amount of pathology in all the accessory sinuses. For the antrum, this is accomplished by one complete inspection with the Wappler antroscope, easily made in any adult patient without serious discomfort. One-fourth to one-half dram of 4-percent procaine with three or four drops 1-1000 adrenalin is injected through the buccal mucous membrane into the canine fossa after which the trocar may be passed directly into the antrum, all parts of which may be leisurely inspected. No injection either of air or of liquid is needed, although irrigation may be employed if for any reason desirable. As the antroscope is as yet known to few rhinologists, I have obtained from Messrs. Sharp and Smith cuts of the Wappler instrument which are shown herewith. The instrument as shown in Fig. 4 is about 11½ Fr. in calibre. It provides a clear, upright, slightly magnified view. Fig. 3 is the cannula, Fig. 2 the trocar and Fig. 1 the two combined. Fig. 5 is a sheath for protecting the instrument when not in use. The antroscope was originally intended for



use through the nasal meatus by puncturing the naso-antral wall but the approach through the canine fossa is in every way preferable. It is less disagreeable to the patient, less difficult for the operator and it provides a view of the entire antral cavity including the apex which is impossible by the nasal route. For one equipped with the nasopharyngoscope it is not necessary to purchase the special antroscope. By

the use of the Duke trocar, originally made for use in thoracic empyema, the same procedure can be employed without difficulty. It is well to have this trocar shortened slightly to adapt it to the length of the nasopharyngoscope which it otherwise fits perfectly.



The determination of ethmoid and sphenoid pathology is of first importance in all asthma cases and this is rarely accomplished by a single method or a single examination. It is not enough to say that no discharge, polypoid degeneration or other disease can be found upon inspection. Such conditions frequently exist without obvious manifestation and are only revealed after a course of what we call diagnostic treatments. These will be described when we discuss the Dowling method. Likewise it is not enough to say that discharge or tissue change does exist until we have determined the amount, character, extent, and origin of it. Here also the diagnostic treatments are very helpful.

In this connection bacteriological studies may be made of the various discharges when found, but to one who no longer needs vaccine therapy these are chiefly of academic interest. Variations of bacterial flora in chronic nasal infections do not greatly influence the prognosis or treatment. A knowledge of frontal pathology is, of course, desirable, but as this does not bear directly upon the asthma problem it may often await the outcome of intranasal treatment.

Modern Ideas in Treatment

With all the information obtainable by these combined measures, we are prepared to take up the question of treatment. Here again, and perhaps most of all, there is need for a radical shifting of emphasis. In the minds of both doctors and layman, the words "nasal treatment" are practically synonymous with "operation". This situation has resulted from the discarding of the useless spray and irrigation methods and the development of modern intranasal surgery. With nonsurgical resources practically nil, and with surgical technic enormously improved, the usual rhinological diagnosis has come to mean little more than whether or not to operate.

This situation is now happily being modified by a wider acquaintance with the Dowling method of treating nasal infections. With the advent of colloidal chemistry, Dowling and many others saw the value of a substance that could do two things impossible to crystalloids; namely, pass through a living membrane without damage to it and destroy bacterial life without injury to the tissues of the host. But Dowling alone seems to have appreciated the time element in the process and to have seen the advantage of prolonged contact of the solution with the tissues, which is not possible by irrigations. The Dowling method differs radically from all other procedures dealing with mucous-membrane infections in that it is not a surface treatment. Recognizing that the pathology is beneath the surface, he utilizes the principle of osmosis and obtains results impossible by any form of surface application. His so-called tampon is simply the application to the mucous surface of a cotton or gauze pad saturated in a colloidal silver solution and allowing this to remain until the solution is taken up by the tissues, this being from forty to eighty minutes. Experiment shows that the solution is distributed by the circulation far beyond the area of its application. His preference is for an aqueous solution of argyrol in a strength of about ten percent. The mucous surface must, of course, be clean and it is desirable to cover with the cotton pads every available bit of the intranasal mucosa except the floor. No cocaine nor adrenalin should be employed. It is important to reach the posterior and upper nasal spaces and as far in the infundibular direction as possible without trauma. The clumsy stuffing of

cotton wads into the anterior nose, so often called Dowling treatment, is nothing but a travesty.

Technic of Nasal Tamponade

The niceties of technic are highly important. My own practice differs slightly from that of Dowling. Instead of a single large tampon, I use a variable number of thin and delicate pencils of long fiber cotton. These are successively applied with a slender, polished, tapering applicator in sufficient number to cover the nasal mucosa all the way from the nasopharyngeal vault and the cribiform plate around the under surface of the ethmoid turbinal and upward upon its outer surface to a considerable extent. After swelling is reduced by a few treatments, the turbinal can be almost entirely enveloped by the tampons. It is desirable that the cotton be easily released from the applicator and left at the farthest point reached without crowding or friction. The economical nose specialist who uses rough, rusty, or crooked applicators often, unwittingly, does an intranasal massage that leaves his patient in worse condition than before.

Besides the therapeutic use of the tampon, it has an important diagnostic value. This is the change in color (blanching) which the argyrol undergoes in the presence of infection. This change is unmistakable and positively indicates infection even in the absence of other signs. In obscure or doubtful cases a succession of six to ten "diagnostic treatments" should be given, after which the blanched tampon or even the appearance of pus or small polyps in the deep recesses will often remove all doubt.

In my twenty years' experience with the Dowling method, I have, of course, tried many solutions that were recommended as substitutes for argyrol. Some are worthless, some of partial value and some perhaps as good, but none has in any way given better satisfaction. Recently, however, at the suggestion of Dr. Hermann Hille, the man who originally gave us argyrol, I have begun the use of his later preparation called lunosol. This differs from argyrol in being a colloidal silver chloride instead of metallic silver in colloidal form. If further experience confirms our first month's trial, it will be an improvement in several ways; namely, less irritation, more rapid absorption, equal therapeutic effect and freedom from stain. This last will have an offset

in the loss of diagnostic value by the blanching reaction above mentioned. I have asked Doctor Hille to give me some data as to the properties of lunosol, which he has kindly done as follows:

Colloidal Silver

"In a search for a colloidal silver preparation which would have full therapeutic efficiency and at the same time be free from the objectionable staining properties of my earlier product, argyrol, my attention was focused on silver chloride.

"This is, perhaps, the most important of the silver salts, as it is that which is most sensitive to light. Its chemical formula is AgCl, and it occurs in nature as wax-like masses known as *luna cornea* (Horn silver).

"In colloidal form, silver chloride is so finely subdivided that it is freely soluble in water, forming an opalescent, milky solution, which is practically neutral to litmus paper, has no caustic or corrosive action, is strongly antiseptic and germicidal, has deep penetrating power, and is free from objectionable staining properties.

"As a result of my investigations in the whole field of colloidal silver, I finally settled on colloidal silver chloride as the ideal silver colloid. Under the name of "lunosol", this has now been issued to the medical profession for quite some time, and its clinical efficiency has been amply demonstrated.

"In comparative tests with other leading silver salts, the fact was developed that lunosol is about twenty times more deadly to gonococci than other colloidal silver preparations.

"Ballenger and Elder, Funke, Cobb and others have published clinical reports in which they agree that lunosol has high germicidal value, is nonirritating, and has the faculty of giving off emanations which apparently penetrate further into the tissues than the other silver salts.

"In the report of an extensive investigation into the therapeutic action of colloidal silver by W. F. von Oettingen, Ph.D., M.D., published in *Münchener Medizinische Wochenschrift*, some interesting conclusions are reached as a result of the comparative tests of the leading colloidal silver preparations.

"Doctor von Oettingen states, among other conclusions, that four of the leading silver salts under observation show a strong irritation of the nerves, which was demonstrated on the frog specimens by cramps and convulsions which totally hid the effect on the peripheral vessels. 'Lunosol, on the other hand, does not give this effect,' he said, 'but has a medium contracting effect on the peripherals, with no corrosive effect on the mucous membrane. This preparation does not have the irritating effect on the nerves as have the other preparations. It contracts inflamed vessels, accelerates the circulation, and reduces hyperemia and turgidity.'

"The nonirritating properties of lunosol are demonstrated by the fact that a 10-

percent solution in the eye is as bland as water.

"Freshly made solutions have been found to have greater germicidal value than the solution several days or weeks old. It is therefore advisable to make up fresh solutions every day."

It is now apparent that in determining our line of treatment we are not compelled to think exclusively of surgery. Mechanical blocking, such as septal deformity, adenoids, etc., is of course treated by operation. Polyps when present are removed, but only as a first step in treatment. No patient is permitted to believe that the removal of a number of nasal polyps is in the slightest degree remedial. If the doctors, too, could get rid of this belief, it would be most helpful. Perhaps, our most frequent happy result is obtained by complete septum resection followed by Dowling treatment to clear up a chronic ethmoid infection. In patients younger than middle age, more radical measures are unusual, while in children they are, with us, extremely rare.

I think it is in this field that Dowling's method accomplishes its most outstanding achievement. The great prevalence and the great importance of chronic ethmoid infection in children and young adults, long known to some of us, is not yet generally appreciated. A few rhinologists, especially Dean, of Iowa City, have done splendid educational work along these lines. But they have been to some degree handicapped by the fact that their only remedial resources were surgical. A procedure that enables us to restore these patients to normal without surgery is certainly a notable contribution to rhinology.

Intranasal Surgery

It is appropriate at this point to speak of the various partial or so-called drainage operations upon the ethmoid. Much diversion is furnished to medical gatherings by the heated arguments among operators as to the applicability or desirability, or even the possibility, of some of the procedures advocated. The only point of agreement seems to be that all of them frequently fail, and this is amply supported by clinical evidence.

In so far as any generalization is possible, the whole subject may be summarized as follows: Those cases of ethmoid disease with retention of discharges, swelling and edema from blocking of natural drainage, where no extensive tissue change within the cells is present, are curable by what-

every surgery will unblock the natural drainage, followed by Dowling treatment, with no opening of the cells whatever. It is chiefly in cases of this type that partial operations are reported as successful.

Those cases of extensive necrotic or polypoid changes within the ethmoid labyrinth are not amenable to any extraethmoid procedure, and any operation, short of complete exenteration, is almost certain to result in disappointment.

Of course, widely varying degrees of pathology are encountered but, generally speaking, if we cannot avoid an ethmoid operation by our present technic a radical one must be made.

Our hardest problems are presented by the patients in advanced life with nasal pathology so extensive that its complete removal is perhaps impossible. Often it has been complicated by previous surgical efforts that have only added to the difficulty. Any intranasal operation that is partially or bunglingly performed, or even a good operation followed by poor after-care, not only fails of the expected results but adds greatly to the difficulty of the work that is subsequently required.

The field of radical ethmoid-sphenoid surgery is a difficult one but, with full allowance for this, the proportion of unfortunate results remains inexcusably high. Of the factors that account for this, three are conspicuous: (1) Poor selection of operative risks; (2) Lack of precision and delicacy in operative technic; (3) Faulty postoperative care.

The patient upon whom an ethmoid-sphenoid exenteration is to be made should be given the same preoperative study and preparation as for any other major surgical procedure. The operation itself should be made with far more precision and delicacy than is usually done or is, in fact, possible with the instruments generally employed. The truth is that a satisfactory exenteration is not possible with any instruments regularly supplied in the surgical market, all of which require, at some stage, some form of breaking, twisting, or scraping—three procedures that are wholly improper in this field.

Surgical Technic

Greenfield Sluder, with his ethmoid knives, made a distinct advance in both precision and delicacy but there are two essential things that Sluder's knives will not do. One is to cut a thick wall of sound

bone and the other is to make a transverse cut in any kind of tissue. No knife of whatever type will cut sound bone of any considerable thickness, such as the anterior wall of the sphenoid or posterior ethmoid cells. For this purpose, I have for many years used a saw-toothed instrument shaped like a bistoury blade, mounted on a strong but slender angular handle. It is easy, with this, to enter the natural opening of the sphenoid and saw away the anterior wall, as may also be done with the antral wall or ethmoid capsule when desirable. Likewise I have, besides the usual longitudinal cutting knives, a pair with right and left angular blades with which the ethmoid mass is severed from its posterior attachment without the torsion that is otherwise necessary.



Fig. 6.

These instruments are made for me by Messrs. Sharp and Smith, of Chicago, who have kindly furnished me the accompanying

illustration, (Fig. 6). Suitable biting forceps are used to remove remnants of tissue, but curettes are not employed at any time. Straight biting forceps are not sufficient, as it is often necessary to cut in a lateral or upward direction. It is well to have several sizes of angular biting forceps, preferably with jaws like those of the Myles punch. For the lower sphenoid wall we must have a downward biting instrument of the sliding type, which must combine strength with slenderness. All cutting is done under direct vision with no violence that can produce injury to tissues outside the actual area of operation. The aim is to convert the ethmoid labyrinth, with the sphenoid where necessary, into an open cavity with walls as smooth as the nature of the structure will permit. The mucoperiosteal covering of these walls is carefully preserved. No packing is used. The patient keeps the nose free by gentle blowing or by drawing the secretions backward into the pharynx and expelling from the mouth. Violent blowing may produce an orbital emphysema, an annoying but probably never serious conditions lasting only a few days. The surgeon cleanses the cavity daily, preferably by direct irrigation, using a three-ounce piston syringe with warm salt solution, followed by the Dowling tampon. This is especially useful in the hyperplastic cases to prevent exuberant granulations with new polyp formation. The percentage of good results even from well made operations is considerably increased by this procedure. All these patients, whether asthmatic or not, are advised to report once or twice yearly for inspection. In this way they are protected against the possible recurrence that might at first escape their notice. In clinic practice this is not feasible but most private patients will intelligently cooperate. The occurrence of a so-called "head cold" is always to be regarded with suspicion and a few Dowling treatments at such times are valuable both as protection and relief.

122 South Michigan Ave.

Simplified Mechanics of Diathermy

By A. I. ARNESON, M.D., Minneapolis

SUCCESS in the employment of physiotherapeutic modalities seems to require that the practitioner be able to visualize and analyze the mechanics of the pathological condition to be treated and also

of the various modalities at his command, that he may choose and apply correctly those best suited to the problem in hand.

Diathermy is without doubt, at present, the one most useful single physiotherapeutic

modality at our disposal. Much information has been made available in recent years concerning this valuable therapeutic aid, but there are certain sure signs, occurring all too frequently, that indicate that a great many physicians do not understand the basic principles on which their machines do, or should, operate. Unless the physician possesses a machine of proper design, and understands how to make it do what it is designed to do, he can not possibly obtain satisfactory results.

It shall be the purpose of this paper to discuss the mechanics or physics of this modality rather than the questions pertaining to proper selection of cases and the correct technic of applying the various modifications of the high-frequency, high-voltage currents, as these latter points have been so ably elaborated upon and emphasized by Dr. C. M. Sampson and many others, that nothing further need be said on those points at this time. It must be quite apparent that all considerations of diathermy must start with the machine itself. Proper selection of cases and proper technic of application mean nothing unless the machine is correctly designed. It is the hope of the writer that some of the points brought out in this paper may be the means of saving physicians from "investing" in useless apparatus masquerading under the name of "Diathermy" machines, and that those who have already been victimized by unscrupulous agents and makers will be able to analyze the situation, throw out the worthless junk and take heart to buy good machines and begin to get the results they expected.

Electricity is a more or less mysterious entity to many of us. It is mysterious because it does not partake of any of the qualities by which we are accustomed to recognize other natural entities. We can not see what electricity is made of. We can not see what color it has, nor what shape or size its component parts may have. We can feel the *effect of electricity*, but we cannot feel whether it is round or angular, rough or smooth, hot or cold. An electrical current is, however, accepted as being composed of a stream of the ultimate divisions of all matter, the electrons, and obeys certain very definite laws of nature so that by its characteristics we may know it.

Diathermic Modalities Compared to Firearms

It occurred to the writer that the high-frequency, high-voltage currents could be

compared very conveniently and accurately to firearms and bullets. The comparisons used in the following text are not technically correct in every respect but are so used to make clear the points under discussion. An army rifle is of the type known as a "high-power" rifle. Likewise, a machine gun is a high-power arm, which is so constructed that it can fire bullets at high-frequency, the shots following each other at very short intervals of time. For convenience, let us compare a diathermy machine to a machine gun. We then compare the speed of the bullet to the voltage of the machine; the weight of the bullet to the amperage of the electrical current; the frequency of the shots to the frequency of the waves of electricity, etc. We all know that the primary requisite for a rifle bullet to penetrate a foot-thick plank of oak is high speed. Likewise, it is absolutely necessary that an electrical current have high voltage in order to penetrate deeply-placed and resistant tissues and organs. We know that the bullet must be of sufficient weight, also, or its speed alone will not suffice for penetration, and so also must the electrical current have enough weight (amperage), or nothing is accomplished.

Now, to get the greatest possible efficiency from the machine gun, there must be an accurate interrelationship between the amount of powder used to give the bullet its speed, and its weight, shape and size. When the speed, shape, size and weight balance each other exactly, then we have the highest possible efficiency of which our gun is capable. This condition corresponds to what is spoken of as the "resonance" of diathermy machines, and means that there must be just the right proportions between voltage, amperage and wave-form to produce the greatest possible efficiency in the machine. The matter of frequency is also very important. Just as the high-frequency firing of a machine gun at a resistant target will heat up the target much more than the same number of shots fired slowly from a single-shot rifle, so is it necessary that the electrical waves hit the resistant tissue a great many times per second in order to produce enough heat.

We know that the rifle bullet must be of smooth, regular outline for maximum penetration at a given speed. So also the electrical waves must be of just the right shape. A rough, lopsided, irregular bullet will not penetrate; neither will a rough, irregular, lop-sided electrical wave. From

the foregoing comparisons, it should be quite evident that, unless the diathermy machine delivers a current of very high voltage for penetration, and in sufficient amperage and frequency and of suitable wave form, there can be no diathermizing effect produced. Any machine that does not comply with these requirements can not be in any way superior to the common hot-water bottle or electric pad. When an experienced hunter goes hunting for wild elephants, he uses high-powered rifles, not pocket pistols. When the experienced physician goes hunting for a deep-seated venous stasis, fibrosis, etc., and attempts to replace these conditions with an active, cleansing flow of blood, by which healing processes may be stimulated, he uses a *high-voltage, high-frequency* machine, with just enough amperage to do the work in hand. If the hunter used a pocket pistol and the physician a portable machine, the wild elephant and the disease either would not be affected at all or only be made wilder than before.

Volts and Amperes

The one most misleading thing about diathermy machines is the milliamperemeter. Purveyors of "suitcase" models and other portable machines are very ready with the statement that, surely there is no need for the physician to buy a large, heavy machine when their "wonderful" little machine will give just as much amperage as the big machines will. Please remember that all the amperage in the world is of no avail for diathermy unless there is voltage back of it to carry it through to the point where it is wanted. You may have a rifle firing a bullet an inch in diameter, but it surely will not penetrate anything if it does not have speed also. The size of the bore of the rifle barrel limits the size of bullet that can be fired from it. In like manner, the size of the wire in a diathermy machine determines the limit of the amount (amperage) of electricity that any voltage, high or low, can make go through that wire. If the wire is small, high amperage absolutely can not pass through it without burning up the wire and ruining the machine, just as trying to shoot too large a bullet will burst a gun barrel. It, therefore, follows that, if a portable machine can deliver a high amperage of electric current, the wire used in it must be of large diameter.

The voltage of an electrical current is its force. Just as it requires a large amount of powder to give a rifle bullet high speed, so

must we have a high ratio of turns on our transformer to step up the voltage from the 110 volts of the commercial supply. The increase in voltage is directly proportional to the relative number of turns of wire in the primary and secondary coils of the transformer. If, for instance, we wish to "step up" the voltage from 100 volts to 30,000, the secondary coil must have 300 times as many turns of wire as the primary coil. For maximum efficiency of a transformer, it is necessary that the primary have not one turn of wire, but a goodly number, and when this number, whatever determined, is multiplied by 300 in the secondary, it must be self-evident that the transformer will assume considerable size and weight, when all these turns must also be of *large* wire to permit enough amperage to be delivered.

Therefore, if a given portable machine can deliver a given amount of amperage, and the transformer is small enough to be carried around by hand, it absolutely can mean one thing and one only—that the wire in the coils is large and, therefore, there simply cannot be very many turns of wire; and without turns of wire you cannot have high voltage, nor can the transformer be operating efficiently. Please do not misunderstand us. Both the pocket pistol and *good* portable diathermy machines have their uses, but the user of either must realize their limitations. Surely a good portable diathermy machine may give enough voltage to penetrate the very low resistance of lungs and thus be of value in the treatment of pneumonia. The point we are making is—know your machine, its possibilities and its impossibilities so that you may not place your confidence in the stuff that dreams are made of, failing thereby to benefit your patient; losing your confidence in the *method* rather than your particular machine, etc. Knowledge of these facts should enable the physician to determine whether or not he would be justified in purchasing even the best of portable equipment. It might appear that this could be considered favorably *after* a big machine has been installed. Certainly the portable machine cannot be purchased with the idea that it will do its particular work and that of the big machine also.

As a final hint about the value of milliamperemeter readings, try the following experiment: Connect a large plate electrode to one pole of D'Arsonval circuit and on this place a piece of fresh beef.

To the other D'Arsonval pole connect a needle electrode as used for electrocoagulation. Using a big, correctly-made machine, one may find that it takes 500 ma. flowing ten seconds to produce a zone of white coagulated tissue around the point where the electrode is inserted into the beef. Now, using the same cords, plates and needle electrode, and the same piece of beef, try the same experiment with a portable machine and it will perhaps be found that it takes, not 500 but 3000 ma. to produce a similar coagulation of the beef in the same length of time. The conclusion is obvious—heat being proportional to the product obtained by multiplying volts by amperes—that the portable machine has such a low voltage that the same degree of coagulation (heat) was produced only when six times as much amperage was used.

This brings us to a second confusing point—that of the sense of heat produced on the patient's skin beneath the electrodes applied for diathermizing a part. The heat which the *skin* will tolerate is the limit of therapeutic application with every machine. It is impossible to use more electricity than the skin can stand. If, then, the voltage is low, the electrical current penetrates the *skin* only, producing much heat there on account of its relative dryness and high resistance, and then the current passes by the highly conductive, low resistance film of blood in the capillaries beneath the skin, around to the other electrode and through the skin again. Only by very high voltage can this electrical current be made to travel in straight lines, the shortest distance between the electrodes. Therefore, the fact that the portable machine may give as great heat sensation on the skin at 500 ma. as a big machine at the same ma. setting means absolutely nothing as to the heat produced in the interior of the part.

Correct Operation of Machine Is Essential

Since it is necessary to have high voltage, it remains for the physician to get this high voltage out of his machine. No machine will work satisfactorily unless it is operated correctly. On most of our modern diathermy machines there are three variable controls—the rheostat or choke coil; the distance be-

tween points on spark gap; and the number of spark gaps in circuit. The effects of each of these factors interlock but, for our discussion, we may assume that the spark gap has a greater influence, relatively, on the voltage than on amperage and the rheostat or choke coil has relatively greater effect on amperage than voltage. All are familiar with the fact that, with all switches closed, there is still no flow of current from the D'Arsonval poles until the spark gap is opened. As the gap is opened, the amperage rises slowly while the voltage jumps very fast. As a general principle, we may then state that, other factors being proportional, the spark gap should be used as widely opened as possible, short of producing faradism or other undesirable effects. Unless the spark gap is used widely opened, the biggest diathermy machine made will not deliver voltage high enough to penetrate thick and dense portions of the body because of the damping effect of a short gap.

Experience with your own particular machine must teach you the relationship to be maintained between the rheostat or choke coil setting and the number of spark gaps to use in circuit. If it is possible to get the gap wide open and use all the gaps in circuit, do so; if not, use fewer gaps, but as many as possible at all times. The reason for this lies in the maintaining of resonance, the proper balance between voltage, amperage and oscillations, high frequencies, wave forms, etc., and is rather too complicated to illustrate in a paper of this kind. Remember then, that the first consideration is voltage and to get this the spark gap must be as widely opened as other factors will permit. This includes among other things, keeping the rheostat setting as low as possible.

Given properly constructed machines, correctly operated, in properly selected cases, we may hope to secure very gratifying results in a large number of cases, for the method is rational, simple, and acts as an aid or ally to Nature, tending to promote resolution and healing by means of an augmentation of Nature's method—active flushing of the diseased part with healing blood.

831 Second Avenue South.

Colloids

A Brief Explanation of Their Characteristics and Use as Therapeutic Agents

By HERMANN HILLE, Ph.D., Chicago, Illinois

EVERY now and then in the medical literature of the present day, the physician encounters mention of "the colloids", and, although he has a vague idea of the character of the colloids, his general information on them is, indeed, very meager.

The physician is not to blame for this because most of the published work on colloid chemistry has attacked the subject from the standpoint of the research chemist; and a concise explanation of the colloids, what they are, how they are made, and the indications for their use as therapeutic agents, has been lacking.

I have given so many years of study to colloid chemistry that a large number of physicians come to me for information on these most interesting and valuable substances, and I feel that this brief description will be of general interest to the physician.

What Is a Colloid?

This is the first question which naturally comes to mind, and the best definition, to my mind, is that a *colloid* is a commonly insoluble substance rendered soluble by extreme subdivision.

Another simple statement might help the understanding, and this is that soap in water produces a colloidal solution, whereas soap in alcohol is crystalloidal.

much smaller than that of the average microorganism.

Yet, another statement which will aid in an understanding of the application of the colloids is that the human organism is colloidal in character.

Crystalloids

Opposed to colloids we have the crystalloids, in which form appear most of the purely mineral-world alkalis, acids, salts, etc.

In colloidal form are generally exhibited vegetables, meats, eggs, starch, soap, serums—in fact, the bulk of the vegetable, animal and human bodies as they appear in nature.

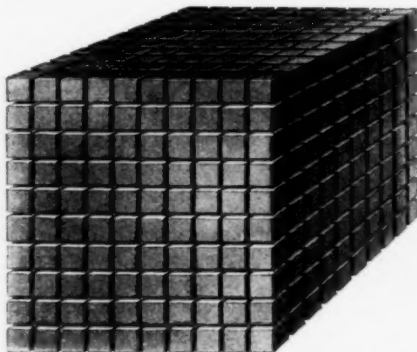


Fig. 3. Illustration to show how, by extreme subdivision, the colloidal form increases the surface energy.

To illustrate: On one hand, we have a large crystal of calcite (Fig. 1), hard, rigid, solid. On the other hand, we have a sponge (Fig. 2), plastic, porous, cellular—which is a rather crude but apt illustration of the colloidal state.

Extreme Subdivision

A consideration of both the sponge and the crystal will give an idea of how surface energy is increased when the colloidal substance is used.

The surface of the crystal is, of course, the outer surface of the hard substance; but the surface of the sponge is multiplied many times, because of the little cells present throughout the sponge and the multiplicity of surfaces.



Fig. 1. Illustration of a large crystal of calcite more than a foot in length, from a cave near Joplin, Mo.

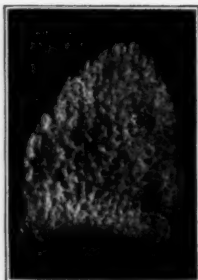


Fig. 2. Sponge from the Mediterranean Sea, illustrating the colloidal form.

The size of a colloid ranges from one to one hundred $\mu\mu$ (one $\mu\mu$, or millimicron, equals one 25-millionth of an inch). This means that the diameter of a colloid is

To illustrate further, we shall take an imaginary cube of gold, one inch square. (Fig. 3.) The total surface energy of this gold is represented by six square inches. We shall imagine that this block is cut into a million equal parts each way. Then we shall have colloidal gold—soluble in water, with the total surface area increased from six square inches to more than an acre. The former cube of hard, rigid, insoluble metal has become easily soluble in water, forming a deep ruby-red colloidal solution of gold—and the medicinal properties of metallic gold are now available.

As a result of this, we realize that when a mineral substance is used for medicinal purposes in the colloidal form, we get a great deal more effectiveness from the same amount of mineral than if it were used in the crystalloidal form.

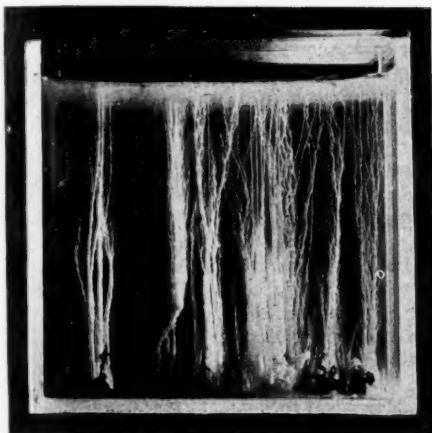


Fig. 4. Osmotic growth of crystals in a "water-glass" solution.

Most important is the fact that, in addition to this increased surface energy, the mineral when in colloidal form has not that quick, chemical, generally toxic action possessed by the crystalloidal form.

Thus, with the colloid we are able to get a greater amount of actual surface energy, meaning greater effectiveness, than from the coarser insoluble substance, and greater freedom from toxic effects or corrosive action than from soluble crystalloids.

Some Interesting Experiments

There are several interesting experiments which you can make very quickly in your own office. They are spectacular, illuminating, instructive, and will give you an impres-

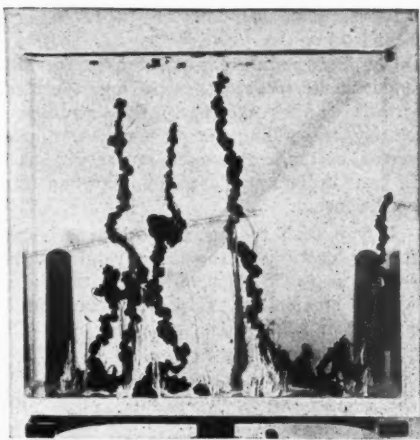


Fig. 5. Osmotic growths, ten minutes old.

sive idea of the difference in form and structure which a substance takes on when it is reduced to the colloidal form.

All you have to do is to place a few crystals of a soluble metallic salt in a solution of a substance with which this salt forms an insoluble product. We shall take, for instance, calcium chloride or ferric chloride. Drop these crystals into a solution of sodium silicate (water glass). As soon as the crystals are dropped into the solution, they immediately begin to grow! Now, you have always thought of a crystal as a hard, definite, intractable substance, which could only be changed in form by reducing it to a powder or dissolving it in a solution—but here, before your eyes, a crystal begins to grow and take on a vege-

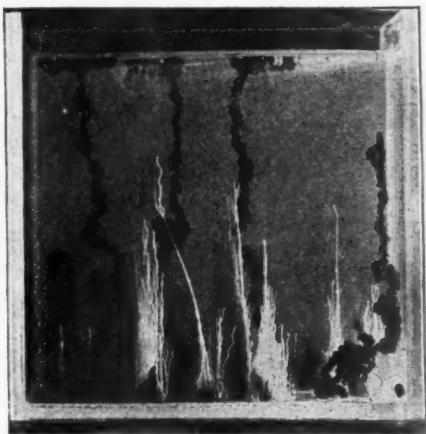


Fig. 6. Osmotic growths, forty minutes old.

table form and cellular structure! (Figs. 4, 5 and 6.)

By taking different substances for the experiments, different colors and types of growth can be shown, so that structures closely resembling plants, flowers, mushrooms, cactus, corals, etc., can be produced in an ordinary glass, by varying the conditions.

If you wish to continue the experiment further, use any of the other metallic salts—such as ferric chloride, ferrous sulphate, ferric ammonium sulphate, manganese chloride or sulphate, nickel sulphate, cobalt chloride, copper salts, etc.—and drop them into solutions of the silicates, carbonates, phosphates, ferrocyanides, etc. Thus, you will be able to produce most beautiful growths, in all the colors of the rainbow—which, by their brilliance and variety of structure, will remind you of nothing so much as the submarine gardens which can sometimes be seen through the glass bottom of a boat off a tropical island.

This interesting experiment is pregnant with meaning. It will make the professional man think. It leads to the inevitable conclusion that the colloidal form of a mineral approaches closely to the vegetable and animal forms, and that this is the form in which mineral substances should be administered wherever toxic and destructive effects are to be avoided.

Colloids in Medicine

The use of the colloids in medicine has been a thing of slow but steady growth and has extended over more years than most people imagine. That which is most generally known is colloidal silver, with which, either as collargol, argyrol, or one of the many other colloidal silvers which followed their introduction, the physician is familiar. He has been using this silver, finding that with it he can get the germicidal action of silver, without the caustic effect or irritation which are encountered when silver nitrate and other crystalloidal silver salts are used.

But, older than silver, and dating back into medieval history, we have a record of a form of colloidal gold having been used under the name of "aurum potabile" (potable gold), which was known and medicinally used many centuries ago. Its production and virtues were described by Basilus Valentinus, Sir George Ripley, Paracelsus, and many others.

During the last century, some of the

world's great chemists—among them Faraday in England, and Berzelius in Sweden—produced colloidal gold, and studied its properties. Some time ago the writer, while on a visit to the Laboratory of the Royal Institution, Albemarle Street, London, made an inspection of a colloidal gold solution made by Faraday more than sixty years ago, and found it still in perfect condition.

The Scope of Colloidal Gold

Before we are able to define the field of colloidal gold in therapeutics, we must have a great deal more clinical evidence, and many investigators are at the present time using colloidal gold in the treatment of various diseases—so that, in the near future, we may expect some very definite information along these lines.

We do know, however, that it is a splendid systemic tonic, and gold in the colloidal form can be taken without any ill effects or toxic symptoms, in very large quantities, while in the crystalloidal form only very minute quantities of gold can be tolerated.

When speaking of the medicinal action of gold, the "gold cure" for alcoholism naturally comes to mind, and as far as I can ascertain, the real effect of this gold treatment was to so tone up the system that the desire for the "kick" from an alcoholic stimulant was either removed or greatly diminished. Colloidal gold seems to have the same antihabit effect. A number of such cases have been reported.

Other Colloidal Substances

Mercury has so many uses in medicine and is considered so valuable that the mind naturally turns to the possibilities of colloidal mercury. Considerable work has been done on a product of this kind, and during the war some of the Army and Navy surgeons at Great Lakes, Fort Sheridan, and other camps made extensive clinical experiments with the use of the colloidal sulphide of mercury and copper in the treatment of influenza, pneumonia, etc. They encountered most satisfactory results, and found that a comparatively large quantity of the mineral could be administered by this form without toxic symptoms, and the result of the treatment with this colloid was that the cases so treated developed fewer pneumonia complications and recovered very quickly from the influenza.

Colloidal arsenic has also been used—generally in combination with colloidal mercury and copper, because with it the

typical stimulating effect of the arsenic is produced without the toxic symptoms or any violent reaction.

Other substances on which some interesting work has been done up to the present time are colloidal iron and colloidal calomel; and it is certain that, when the benign

character of the colloid is better understood, a wider clinical use will ensue, which will not only encourage the development of the colloidal substances themselves but definitely establish their place as valuable medicinal agents in the treatment of a wide range of diseases.

Recent Progress in the Study of Scarlatina

By J. F. BIEHN, M.D., Chicago, Illinois

SCARLET fever, one of the dread infections that has, in the past, invalidated many and resulted fatally in many more cases, appears to be practically conquered. Doctors George F. and Gladys Henry Dick, of the John McCormick Institute for Infectious Disease, have recently demonstrated the specific cause of scarlet fever. A specific means for the diagnosis, prevention and cure, as well as the determination of susceptibility and immunity have also been worked out. All of this followed logically upon the proof of the etiologic cause which they have shown to be a specific type of the hemolytic streptococcus.

Hemolytic Streptococci the Cause

That hemolytic streptococci were concerned in scarlet fever had been surmised for many years, but heretofore not proved. Koch's laws have, however, now been fulfilled in the case of two types of hemolytic streptococci and these are now accepted as the proven cause of scarlet fever. An extensive series of carefully controlled experiments, using human volunteers, has made success possible and has furnished proof of the most important characteristics of the disease, that heretofore were known through clinical observation only.

Realizing the well-known insusceptibility of the lower animals, the Dicks utilized human volunteers, not however until they had repeatedly attempted to produce the disease in various lower animals and birds. Numerous cultures isolated from acute cases were studied and two types of hemolytic streptococci were found to be predominantly present. These differ only in their ability to ferment mannite. Both are capable of producing the specific scarlet fever toxin.

Repeated failure to produce the disease, by means of filtrates from throat secretions and culture filtrates, led them to use the living streptococcus culture itself. This resulted in success. They further showed

that the culture would produce the disease in cases in which the filtrates had previously failed, showing that the hemolytic streptococcus and not a filterable virus was the etiologic agent.

Scarlatina Resembles Diphtheria

Later, they demonstrated beyond doubt that scarlet fever closely resembles diphtheria in that the organism localizes, usually in the throat, and elaborates a specific toxin which is absorbed and produces the symptoms—fever, rash, etc., as had been surmised previously by Dochez and others. Then followed logically the attempt to devise a skin test similar to the Schick test for diphtheria susceptibility, in which they were also successful. Utilizing the toxin, as in diphtheria, to prevent the disease by active immunization has also been accomplished.

These specific measures have been extensively used by the Dicks, Zingher and others, and although, experimentally, they are established as reliable, it will probably be some time before they become generally available, owing to certain difficulties in standardization of the toxin and antitoxin. As very few of the lower animals are susceptible, this must be done upon human beings, which naturally limits experimentation to a great degree.

Streptococci were noted to be constantly associated with scarlet fever for many years, but were not definitely proved to be the etiological cause. This was, in a measure, due to their presence in normal throats and in other conditions not even remotely resembling scarlet fever, and also to the fact that recovery and immunity to scarlet fever did not confer immunity to septic, hemolytic streptococcus infections; also streptococci apparently did not produce this disease in lower animals.

Recent developments in the classification of streptococci by means of their biologic

reactions have, however, shown that it is possible to separate the hemolytic streptococci into numerous types and that those from scarlet fever cases belong to certain specific types not usually found in other conditions. The Dicks were able to demonstrate the presence of these particular types of hemolytic streptococci in the nasopharynx during the acute stage in all cases examined. They have also been found in wound scarlet, burn scarlet, in the lochia in puerperal scarlet, and in both patients and milk in milk-borne scarlet fever.

Symptoms Due to Toxin

Further work with these cultures demonstrated that a soluble toxin was produced and, when susceptible persons were injected with this toxin, typical scarlet fever symptoms, nausea, vomiting, scarlatinal rash and desquamation resulted.

The contagion is, therefore, to be found in the nasopharynx early in the disease and also in the discharge from ears, nose, etc.; but usually *not* in the skin desquamation, which is due to the toxin.

Small doses of the toxin, intracutaneously, in susceptible persons, produce typical local reactions. This reaction is prevented if the toxin is mixed with convalescent serum or antitoxin from immunized animals.

That scarlet fever may now be diagnosed biologically is of great value, especially in doubtful cases. Schultz and Charlton, in 1918, described a phenomenon, which consists in permanent blanching of the rash surrounding the area of intracutaneous injection of convalescent serum or antitoxin from an immunized animal, which, if positive, definitely establishes the rash as scarlatinal. Other rashes are not affected.

The specific organism may be isolated and identified and it is possible that this procedure may, in the future, be so simplified that it can be as readily performed as in the case of diphtheria. Early in the disease, the patient's blood serum contains the toxin and may be used to determine susceptibility by intracutaneous injection.

The Dick Test

The Dick test will indicate immunity or susceptibility and is positive early in the disease but negative after convalescence. This test consists in the intracutaneous injection of small amounts of the diluted toxin and is analogous to the Schick test for diphtheria. One-tenth of a Cc. of diluted toxin is injected intracutaneously on the

forearm. A positive reaction begins to appear in about four to six hours, as a local area of redness of varying degree, from faint pink to intense red, usually circumscribed and with some local induration. This reaches its maximum in 18 to 24 hours, and then fades. After 48 hours, the color has faded considerably and a day or two later the skin is normal.

Positive reactors are susceptible; that is, they have no antitoxin in their blood. They may possibly be immune, however, owing to a local nasopharyngeal resistance. Negative reactors are probably immune. Their blood contains antitoxin and will give the Schultz-Charlton reaction the same as the serum of convalescents. Results, so far, with the Dick test show that, in numerous cases, positive reactors have acquired the disease but, as yet, no negative reactor has done so.

As a result of extensive clinical work, Zingher concludes that the Dick test is a reliable index of immunity and susceptibility, and that, in connection with active immunization, it will aid in controlling the disease. The reaction is positive early in the disease and negative after convalescence.

About 40 percent of all children are susceptible; between the first and second year, about 70 percent. This gradually decreases with age so that, at the fifteenth to twentieth year, only 25 percent are susceptible.

If the mother is immune, her infant is immune, indicating placental transmission of immunity. This persists for six months and, rarely, for one year.

The percentage of susceptibles is greater among the families of the well-to-do than the poor; and is also greater among the rural population than the urban. The immunity is permanent, to the toxin, but not to the streptococci. We may have septic complications with a negative Dick test in one who is immune to the toxin but not to the streptococci themselves.

When the toxin is injected into susceptible persons they develop malaise, nausea, vomiting, fever and a scarlatinal rash within a few hours. These symptoms, however, disappear in 48 hours, and then the skin test becomes negative. Small amounts of toxin do not produce these severe reactions.

Animals may be immunized to the toxin for the production of antitoxin. At present, this is a rather difficult procedure. Later, when this problem has been thoroughly worked out, a concentrated antitoxin may be

available. Until it is possible to produce commercially such a concentrated antitoxin, reliably standardized, convalescent serum, if obtainable, should be used. Experimentally, antistreptococcic serum has been used with marked success in the treatment of the disease by Blake, Trask and Lynch, who reported that, in all but the severely toxic cases, a single intramuscular injection of 40 to 200 Cc. antistreptococcic serum produced a prompt fall of temperature in eight to twelve hours; rapid and complete fading of the eruption and angina in twelve to fifteen hours; and a complete disappearance of all toxic manifestations in twenty-four hours.

Problems to be Solved

The problem that remains to be solved is the proper production of toxin from the specific hemolytic streptococci which, at present, is somewhat difficult, and, above all, its proper standardization. The Dicks state that, since scarlet fever toxin can be properly standardized only by means of skin tests on a large number of human beings, it is almost certain that improperly stand-

ardized toxin may appear on the market. If it is too weak, it will result in negative skin tests in persons who are really susceptible, and in incomplete immunization; if it is too strong, it will give positive skin tests in persons who are actually immune, and will cause severe reaction during the course of immunization.

However, as the Hygienic Laboratory exercises control over all such products, unquestionably no commercial house will be licensed to sell these products until a reliable and efficient method of standardization has been worked out and until all products marketed conform to these standards.

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Laboratory Aids in the Diagnosis of Pulmonary Tuberculosis *

The Diagnostic Value of a Bacteriologic, Chemic and Cytologic Examination of the Sputum in Tuberculous and Nontuberculous Individuals

By JOHN RITTER, M.D., Chicago, Illinois

Clinical Instructor and Lecturer on Tuberculosis, Rush Medical College, Medical Department of the University of Chicago

IN THE examination of an individual with definite clinical findings, demonstrable physical signs and symptoms of active pulmonary tuberculosis, a positive diagnosis is recorded and the examination of the sputum is not considered of vital importance. However, in a patient with indefinite or obscure clinical findings in whom, from the absence of signs and symptoms, we are often compelled to make a tentative diagnosis of tuberculosis, we frequently make use of both the tuberculin test and a carefully made sputum examination. Hence, in all examinations which must aid us in arriving at a diagnostic conclusion, three laboratory aids must be available: (1) The bacteriologic test—the demonstration of tubercle bacilli in the

sputum; (2) the chemical test—the albumin reaction; (3) the cytologic test—the cellular elements in the sputum, either (a) the lymphocytic cells or (b) the eosinophiles occasionally found in the sputum.

1. *The bacteriologic test—tubercle bacilli in the sputum.*—In the physical examination of a tuberculous subject, if we are somewhat in doubt concerning the diagnosis, we usually examine the sputum for the presence of tubercle bacilli. If we can demonstrate that either few or many tubercle bacilli are present, there is no longer any doubt that the sputum was from a positively tuberculous individual and the diagnosis is thus clinched. However, even with these facts, there may be an occasional exception; namely, when a caseating or softened tuberculous gland situated near a bronchus expels its contents into the bronchus, the

*Read at the Southern Tuberculosis Conference at Birmingham, Alabama, October 17, 1924.

point of least resistance, and mixes with the bronchial secretions. As a result, the sputum is bacilli-positive, but there is no actual pulmonary involvement. Postmortem examination occasionally reveals a scar in a bronchus, the indisputable evidence of an old tuberculous process.

Now if, by microscopic examination, the tubercle bacilli are absent, then we must make use of some of the other laboratory aids and the most important one is to resort to chemical means, the testing of the sputum for albumin.

2. *The chemical test—the albumin reaction.*—In 1855, twenty-seven years before Koch demonstrated the causative agent of all tuberculous disease to be the tubercle bacillus, Biermer called the attention of the medical profession to the presence of albumin in the sputum of the tuberculous patient. Renk, in 1875, found the albumin reaction positive in acute bronchitis, pneumonia and tuberculosis but negative in chronic bronchitis; and Wanner, in 1903, reported on cases of chronic bronchitis, bronchiectasis, gangrene, emboli of the lung, pneumonia and phthisis. He found the sputum to be either positive or negative in some cases of chronic bronchitis. He also demonstrated that the albumin content in the various sputa differed quantitatively, being very conspicuous in pneumonia and always positive in phthisis even in the early stages. This was later confirmed by many investigators, chiefly by Roger and Lévy-Valensi. These latter, in 1910, reported 1200 sputum albumin tests.

Lesieur, in 1910, from close observation stated, "all sputa containing the bacillus of Koch, demonstrated by direct microscopic examination, will invariably give a positive albumin reaction, but if the sputa is negative for albumin then the presence of the tubercle bacillus cannot be demonstrated by either microscopic or any other method." He reported on 190 sputum tests with a positive albumin reaction in 100. Smolizanski, in 1911, at the Sanatorium at Bligny made 255 sputa observations, 40 patients in the first stage of the disease with 35 positive results, 104 in the second stage with 103 positive, and 111 in the third stage, all positive; and he concluded that the negative reactions indicated that the disease had become arrested or that the foci in the lungs were, at the time, latent or inactive but that in all active cases the albumin reaction was diagnostically positive.

The research conducted in the last two

decades along the line of examination of the sputum for the albumin content has placed on the reaction a certain diagnostic importance and, though the literature since that time is quite voluminous, there exists no uniformity of opinion among the different research workers as to a definite value; in fact, some are equally positive that it has no value. For instance, Casali, in 1912, remarked: "The albumin reaction has no diagnostic value because in many cases of pulmonary tuberculosis with positive bacteria findings the reaction is negative and it is positive in nearly all affections of the respiratory organs." Schneider, in 1913, made 90 observations on sputa chiefly from tuberculous individuals and from emphysematous, asthmatic, bronchitic and whooping cough patients. He concluded that the presence of albumin was not specific for tuberculosis. In more than 15 percent of the tuberculous patients there was no albumin in the sputum and the sputum was frequently positive in the nontuberculous. He rejected the diagnostic value of the albumin reaction in tuberculosis.

In 1913, I reported the albumin reaction findings as observed in 108 sputum samples secured from both tuberculous and nontuberculous individuals. This confirmed my belief in the statement given by Smolizanski and other observers. (See Table 1.)

Table 1.

Analysis of Albumin in Sputum.

Albumin positive	75
Albumin negative	33

Total Sputa 108

Analysis of 75 Albumin-positive Sputa.

Albumin	No. Cases	T. B. Pos.	T. B. Neg.
+	10	1	9
++	23	7	16
+++	23	12	11
++++	19	11	8
Totals	75	31	44

(Ritter—N. Y. Med. Record, April 26, 1913.)

A more recent contribution (1921) by Drs. Ward Burdick and Harry Gauss from the Research Department of the National Jewish Hospital, Denver, Colorado, is quite interesting. They offer the following summary:

"It would appear almost conclusive from our table that the albumin reaction is generally positive in all stages of active pulmonary tuberculosis and absent in other chronic respiratory diseases and, as such, may be regarded as a diagnostic agent in chronic respiratory infections in favor of a diagnosis of pulmonary tuberculosis. . . . The study of the literature reveals that the

consensus of opinion of most workers in this field is that the albumin reaction is generally negative in other pulmonary infections, but positive in pulmonary tuberculosis." (See Table 2.)

Table 2.

Albumin Findings in Sputum of Patients with Pulmonary Tuberculosis. (191)

Stage of Dis.	No. Cases	T. B. Pos.	T. B. Neg.	Alb. Pos.	Alb. Neg.	% Pos. Alb.
Incipient.....	60	42	18	57	3	95. %
Mod. Advanced....	64	60	4	63	1	98.4%
Far. Advanced.....	41	35	6	38	3	92.6%
Unclassified.....	26	----	----	26	----	100. %
Totals.....	191	137	28	134	7	96.3%

(Burdick and Gauss—Research, Jewish Hospital, Denver, 1921.)

3. *The cytologic sputum test—the presence of cellular elements in the sputum (a) small lymphocytes; (b) eosinophiles.*—In 1914, I made a second contribution to this field of research, reporting my findings on 199 sputum examinations for albumin and, incidentally, with this chemical examination, a combined microscopical, a search in the properly prepared sputum field, exclusive of the tubercle bacillus, for the lymphocytic cells, with a study of the small lymphocytes.

Table 3.

Lymphocytosis and Albumin in Sputum. (199 Examinations—Tuberculous and Nontuberculous Patients.)

T. B. Pos.	T. B. Neg.	T. B. and Alb.	T. B. Alb. and Lympho
53	146	40	40

Study of 146 Tubercle Bacillus—Negative Sputa.

No. Cases	Marked Lympho	No Lympho	Alb. Pos.	Alb. Neg.
40	×	—	×	—
34	—	—	×	—
34	×	—	—	—
17	—	—	—	—
21	Records lost	—	—	—

(Ritter—J. A. M. A., December 26, 1914.)

This work was founded upon the supposition that if tuberculosis is a lymphocytic disease, and if small lymphocytes are invariably found in the various tuberculous exudates; pleural, cerebrospinal, meningeal, abdominal, etc., they may, with equal certainty, be found in tuberculous sputum. This, then, may be utilized to clinch a doubtful diagnosis.

Attention was first called to this increase of the cellular elements of the sputum (from 35 to 90 percent) as an early diagnostic sign of a pulmonary tuberculous infection by Wolff-Eisner in 1907.

Table 3 gives a brief survey of this work.

A more recent contribution in this field of research is the work of Dr. Kampie Takeuchi of Tokyo, Japan. He endeavors to establish a definite relationship between all the various sputum elements, the albumin, the lymphocytes, the tubercle bacilli and perhaps the eosinophiles. He bases his views upon three, or, more correctly, four sputum reactions, the bacteriologic, the chemical and the two cellular—the lymphocytic and eosinophilic. After submitting 132 sputa samples, tuberculous and nontuberculous, to careful tests, he concludes that when tubercle bacilli are not present in a sputum, then albumin and the lymphocytic and eosinophilic cells are, in most cases, also absent. Tubercle bacilli, albumino-reaction and the preponderance of lymphocytic cells in tuberculous sputum maintain a parallelism. Eosinophiles also go parallel to a certain degree. (See Table 4.)

A microscopic report on 145 sputum examinations submitted to me from a dependable laboratory gave 91 as having no tubercle bacilli present and 54 with positive findings, and, whereas in some fields numerous bacilli were seen, in others only a single bacillus was demonstrable; and in all but 5 no reference was made as to either the lymphocytic picture or the albumin content. At my request, the sputum secured from a particularly suspicious case, a patient having fibroid phthisis with recurrent exacerbations, was examined both for tubercle bacilli and albumin. As usual, the sputum was bacilli negative but 2+ positive for albumin. In a few of these reported smears, Koch's bacilli were absent but many lymphocytes were distinctly noticeable. In one of the reported cases the bacteriologist made the thoughtful notation, "On account of the large number of lymphocytes present, would suggest that another sputum sample from this patient be submitted for re-examination."

As stated above, with the exception of the 5 instances mentioned, and this at my suggestion, in the other 140 sputum tests with either bacilli present or absent, there is not a single reference made either to the lymphocytic picture or to the albumin content. If we consider these 54 sputum samples in which tubercle bacilli were found as derived from positively tuberculous individuals, there still remain 91 sputum tests with reported negative findings. These undoubtedly were not all sputum samples secured from nontuberculous individuals.

Table 4.

Albumin, lymphocytic cells and tubercle bacilli in the sputa.
Dr. Kampie Takeuchi, Medical Director, Takeuch Hospital, Tokyo, Japan.
New York Medical Journal, April 20, 1921.

132 Sputa Examinations—77 Tubercle Bacilli Positive—55 Tubercle Bacilli Negative.

77 Tubercle Bacilli Positive.

55 alb. pos. Lymphocytes pos. Eosinoph. pos.
3 alb. neg. Lymphocytes pos. Eosinoph. pos.
0 alb. neg. Lymphocytes neg. Eosinoph. pos.
1 alb. neg. Lymphocytes neg. Eosinoph. neg.
3 alb. pos. Lymphocytes neg. Eosinoph. neg.
9 alb. pos. Lymphocytes pos. Eosinoph. neg.
6 alb. pos. Lymphocytes neg. Eosinoph. pos.
0 alb. neg. Lymphocytes pos. Eosinoph. neg.

Albuminpositive in 73=95%
Lymphocytespositive in 67=87%
*Eosinophilespositive in 64=83%

*Eosinophilia: When tuberculin, in fairly large doses, is administered the eosinophiles are very frequently increased in number, this often to more than 10 percent. Similarly in active pulmonary tuberculosis the natural tuberculinization incident to the disease

55 Tubercle Bacilli Negative.

5 alb. pos. Lymphocytes pos. Eosinoph. pos.
14 alb. neg. Lymphocytes pos. Eosinoph. pos.
5 alb. neg. Lymphocytes neg. Eosinoph. pos.
22 alb. neg. Lymphocytes neg. Eosinoph. neg.
5 alb. pos. Lymphocytes neg. Eosinoph. neg.
2 alb. pos. Lymphocytes pos. Eosinoph. neg.
2 alb. pos. Lymphocytes neg. Eosinoph. pos.
0 alb. neg. Lymphocytes pos. Eosinoph. neg.

Albuminnegative in 41=74.5%
Lymphocytesnegative in 34=61.8%
Eosinophilesnegative in 29=52.7%

greatly increases the blood eosinophiles and this accounts for the great frequency and the increased number of eosinophiles in the sputum of the tuberculous.

Out of the 91 negative cases, 20 have since, from the clinical picture and the physical signs, been diagnosed as positively tuberculous and 10 have died from pulmonary tuberculosis. It is very evident that, in these 30 cases, the negative sputum findings were of no prognostic significance and, moreover, the findings were very misleading. If, out of such a large number of negative sputum examinations, the report submitted had stated that the albumin content was fairly large in amount, then one might have inferred that this tested sputum had its origin somewhere in the pulmonary parenchyma, in that area where the tubercle bacillus has its habitat; and if, in addition, the small lymphocytes were found to be in fairly large numbers (above 35 percent), one would be in a better position to give a more valuable prognosis as to the future outlook and could have impressed the patient more emphatically in view of the doubtful diagnosis and the negative sputum report.

As a general rule when a sputum report is returned from the bacteriologic laboratory with negative tubercle bacilli findings, a great deal of interest in the case seems to be lost and particularly so by the patient, who in turn becomes obsessed with the dangerous notion that, because of the absence of bacilli, he is positively nontuberculous, goes unconcerned about his affairs and becomes wholly indifferent concerning his health. In many instances the physician also loses interest in the case, whereas had he been informed that, although the sputum of this particular patient was bacilli nega-

tive there was a high albumin content and a lymphocytic picture far in excess of the normal, with an increase of eosinophiles, he would have placed a different construction on a probable diagnosis and prognosis.

It is the general practitioner's privilege, nay, his right, to ask for a more complete and thorough examination of all sputum samples sent to the laboratory and it becomes the duty of the technician to deliver such a full report.

If, during an examination of an individual, the signs and symptoms point to an interstitial nephritis and we suspect a kidney disease, we make a careful urinary examination, and perhaps a second or third, for albumin. This may or may not be present. Next, we centrifuge a specimen and examine microscopically for various urinary casts and epithelial cells; take the specific gravity; ascertain the amount of urine passed in 24 hours, etc. But, in a case of suspected pulmonary disease, when we have passed on the physical examination and the sputum has been reported free from tubercle bacilli, then the case seems to be closed or we look askance at the history, and then usually, all further interest is lost. Should not the sputum receive the same careful and accurate chemical and microscopical examination as is given the urine?

In suggesting that the undergraduates in our medical schools be taught a more intensive sputum examination, not only for the tubercle bacillus but for the other important elemental bodies present, a so-called critic remarked rather facetiously, "Why

expatiate on the sputum albumin test when the proper staining and search for the tubercle bacilli are what the undergraduate student needs?" Evidently this reviewer has had no experience as a clinician. Most assuredly the undergraduate is instructed how to stain sputum for the detection of the tubercle bacillus and he can do that most admirably; but, beyond that, he receives no training and knows nothing about the other important bodies in the sputum, the recognition of which is so frequently necessary to clinch a doubtful diagnosis, especially when the tubercle bacillus has not been found. Who would think of examining samples of urine in a suspected case of Bright's disease by simply testing for albumin?

The physician fails in his duty toward his patient if he neglects to apply every reasonable method, every available test, particularly so in the suspicious cases when a repeated chemical, bacteriological and cytological examination of the sputum may definitely clinch the diagnosis.

The value of the albumin reaction as demonstrable in the sputum is very tersely stated by Calmette. He says, "In my opinion it (the albumin sputum test) can be of most service to the clinician by reason of the great simplicity of its technic and because it may give prognostic indications of which one would regret being deprived."

Technic

The necessary technic for a bacteriologic, chemic and cytologic examination of the sputum is usually very simple. Make two ordinary smears in the usual way. Stain one for the tubercle bacillus by the Ziehl-Neelsen method and prepare the other after the method devised by Much for the recognition of the granular particles of the bacillus. While studying the Ziehl-Neelsen smear for the tubercle bacillus, note carefully the lymphocytic picture. If there is an excess of small lymphocytes above the normal number—a lymphocytosis (from 40 to 90 percent)—this gives additional evidence that in all probability the sputum is from an individual suffering from pulmonary tuberculosis. If an eosinophilia is also present, this further strengthens the diagnosis.

Next, mix 5 Cc. of sputum with 5 Cc. of distilled water; shake until the solution becomes homogeneous; add 1 Cc. of glacial acetic acid; filter through a wetted filter; place 10 Cc. of the filtrate in a centrifuge tube; add 5 Cc. of a 10-percent solution of potassium ferrocyanide, shake well, then centrifuge 5 to 15 minutes at high power with electric centrifuging apparatus. Read off the amount of precipitated albumin and multiply by 2. This gives the percentage of albumin in the sputum.

What Is a Miracle of Healing?

Latent Resources in the Chronically Diseased, Decrepit or Bedridden

By J. MADISON TAYLOR, M.A., M.D., Philadelphia

Formerly Professor of Physical Therapeutics and Dietetics, Medical Department, Temple University, Philadelphia, Pa.

A MIRACLE of healing has much in common with a discovery. In each case powerful forces have gradually converged to a point and contribute to the dramatic culmination. Thereupon, suddenly, some happy combination of circumstances precipitates these forces through an individual who, himself, possesses qualifications enabling him to see and integrate these formative forces, or ideas, into some concrete form. Then the thing desired happens. The materials which furnish most—possibly all—miracles of healing evolve from among those chronically diseased.

It is a well verified fact that, in every case of miraculous healing, however hope-

less the condition may seem, there reside some forces for repair—"factors of safety"—which will operate when the right influences are exerted to render them available and put them to use. The greatest hindrances to recovery, next to fading powers of self-determination and self-coercion, are mechanical obstructions induced by former disease or injury, the causes of which have ceased to be active. These hindrances constitute a grand total of disablements which seem to the sufferer like lions in the way and, because repeated efforts have failed, a chronic discouragement ensues; thus, the element of hope or confident expectation gradually fades or disappears so that little,

or quite insufficient, effort is made or can be elicited, except by some factor capable of penetrating the discouraged consciousness, like a salutary shock, and reversing the currents of action and feeling.

It is admitted that no one can get out of a jug more than is put into it. This deals with the limitations of inanimate objects. It is wholly otherwise with the living human being, wherein reside almost unbelievable resources which can confidently be relied upon to act when rightly directed. The inherent or latent powers of the human constitution, including those of the material body and, even more, those of the mind and emotions, and of that illusive *something* we assume and must reckon with, but can as yet only wonder at—the psyche or spirit—still remain a great marvel.

It is desirable for any one, who elects to become especially proficient in reestablishing health, where it has suffered protracted eclipse, that he shall learn to think in terms derived from sound knowledge and to see with a long perspective. The myriad possibilities of both nature and nurture which lie beyond our ken must be held ever in mind. Chronic disease is a blend of many complex features of original endowment and make-up; of adequacies and inadequacies as well as of acquired disabilities.

Types of Inadequacies

Among the inadequacies are, in brief, such as these:

1. Defects due to heredity, (a) of germ plasm; of type of tissue soil; of conformation; of structure forms; endocrines, etc.; (b) defects in the adaptability of cells; of balance in parts; of symmetry; of special susceptibilities and vulnerabilities; of resistance, etc.; (c) peculiarities of innervation; of energy variants; (d) of inherited maladies; of morbid effects arising from good or bad nurture or environment and emotional appeals.

2. Defects of the individual: in structure; in development; in anatomical conformation; in malpositions or maladaptations in the central nervous system; in the vegetative mechanisms; in the viscera, etc. These are shown most graphically in defects arising in the spinal column, the backbone being the architectural center of the body, as shown by Henry Winsor and myself in *American Medicine*, August, 1922.

3. Inadequacies in the field of physiologic response; in automatic adaptability, etc., partly inherited and partly acquired.

4. Inadequacies of the defense mechanisms, e.g., heat making (see Eric Pritchard). One of the greatest measures of adaptability is the maintenance of a uniform temperature of 98.4° F., under extremes of external temperature from 60° F. to 150° F.

Thus it behooves one to look beyond the individual case to the underlying significances displayed in racial evolution. (See "Disease and Development" by J. M. Taylor and Henry Winsor, *Medical Times*, New York, May, 1924.)

Miraculous Healers

A few remarks about the lay healers may serve to illustrate certain methods of dealing with chronic maladies and infirmities. Modern miracle workers are often remarkable and gifted creatures, who come into public attention now and then. They apparently do work miracles of healing and perform astounding exploits. Although usually quite ignorant of the natural history or phenomena of disease, they are amply supplied with buoyant self-confidence and claim to be possessed of mysterious but impressive "gifts of a healing virtue," which emanates from them. Usually they make an appeal to faith, religious symbolism, or they claim "special advices or powers from the throne of grace," or admit to being "humble vessels" or instruments of a Divine power.

These worthies are usually endowed with extraordinary personalities or magnetism and with rich projectile imaginations. They possess peculiar instincts and appreciation as to mass psychology. They employ highly dramatic settings, use music, crowd singing, rhythms, cadences, loud and repeated asseverations, appeals and fearless predictions. To hear such an one assert this or that is vastly reassuring. The whole procedure is closely analogous to the religious dances of primitive peoples—cadences, rhythmic expressions, which excite glandular secretions. The patient thus becomes attuned to a state of pleased and confidently expectant excitement.

All communities contain many "nervous invalids"—sufferers from the effects of protracted or chronic disease, who somehow fail to respond to any treatment. These derelicts emerge in hundreds or thousands when a well-advertised healer appears. In many of these individuals the disease process is no longer progressive or may have quite ceased, yet the disabling effects

persist in the form of inhibiting effects on will, volition and energy. They remain at what Dr. S. Weir Mitchell called "the dead point of the crank." Upon such as these the healer produces miracles in plenty; results which were permanent and often beyond belief or even his own expectation. I have seen hundreds of these exploits.

Many of these invalids seem to spring to a new life, or capacities for work. Few can remain well for the reason that many and diverse uncured and incurable hindrances persist. The important point is, that a large proportion, thus encouraged, excited and made falsely hopeful, not only relapse, but many are made vastly worse by the over-exertion. If only these results had been, or could be, followed up by competent medical advice, the beginning thus made might be carried on to permanent benefits. Perhaps in the future this combination will be formed of the magnetic personality and the qualified physician, or perhaps these qualities may be united in one man. We are compelled to admit—grudgingly if you prefer—that these healers do perform exploits well worthy of our imitation. We had better take a leaf from their book, modify and use some, and improve upon other of their methods.

Physiology of Excitement

During critical episodes of emotional excitement the great regulative mechanisms of body chemistry (endocrines) gather force and secretion, and expand in directions and degrees which have been recorded, systematized and more or less adequately explained. One large and graphic presentation is by Cannon, and Crile has given other confirmatory evidence and inferences. These picturesque phenomena of endocrine functioning have been successfully ex-

plained by that master of scientific elucidation, Sajoos.

After this uprush of latent forces has subsided, various infections may persist, notable among which is syphilis, and is singularly ubiquitous, and may remain to vex the patient and confuse the issue. There are also the effects of tuberculosis with which most inhabitants of the globe have been infected and there are the mysteries of metabolism to reckon with—the disorders distinguished by errors in biochemistry, in enzyme action and all such.

In enumerating the restorative elements in chronic disease, one enormous factor is too often ignored. This is: voluntary performance of body movements. These are by no means neglected by the wonder-working healer who uniformly supplies a powerful urge to move, to walk, to get busy doing things, in addition to the rousing of all the factors of hope, expectation and confidence in one's powers. It is a common phenomenon in the dramatic episodes of wholesale healing, to see the patient explode into paroxysms of prodigal movement; to run, to leap, to saw the air with his arms, to scream, to shout, to become convulsed, often to fall, but to promptly rise again; in short, to perform really miracles of movement after having lain recumbent for weeks or months and sometimes for years. A marvelous quickening has been shown in all the reserve forces; the organism has been bathed in what Dearborn picturesquely calls "floods of neurility" and, after the tumult and the shoutings have died, where do these self-deluded creatures stand in the scheme of life? At least they have thus come near to salvation and, with suitable help, it seems as though many chronic invalids might be permanently restored.

Surgical Seminar

Conducted by GUSTAVUS M. BLECH, M. D.

Discussion of Surgical Problem No. 1 (Series 1925)

Recapitulation. This problem was submitted by Dr. H. O. Strosnider, of St. Francisville, Mo., and, essentially, is as follows:

A child with a congenital tumor on the side of the neck, about the size of a small orange, soft and cystic to the feel, in the center of which were two hard lumps, was taken sick with high fever when fifteen months old. At that time, the tumor became sensitive to touch and in a week grew to the size of a child's head.

Incision revealed a large, spongy growth with large cells filled with dark brown, thick fluid. The growth was accepted as inoperable, the incision was closed and the child died six days *post operationem*.

The blood findings in this case were: Leucocytes 19,400, hemoglobin 50 percent. The differential count showed polynuclear neutrophils 89 percent, eosinophils 1 percent, lymphocytes 6 percent, large mononuclears 5 percent, transitionals 1 percent.

The requirement called for the diagnosis and reasons by which arrived at. The problem was published in the January, 1925, issue.

Discussion

General Geo. Acheson, St. Martins, N. B., Canada. From the situation, blood picture and operative findings, I would take this to be a case of one of those highly malignant neoplasms, known as lymphosarcoma.

These tumors are of somewhat uncommon occurrence and have been found affecting the cervical, axillary and mesenteric lymphatic glands.

The disease is a primary sarcoma of the lymph glands, and the unilateral occurrence, rapid development and large size of the tumor differentiate it from glandular tuberculosis—the most common variety of cervical adenitis.

Dr. I. E. Crack, Hamilton, Ont., Canada. The child, to my mind, has a teratoid tumor of cystic character. These tumors contain various structures, muscle fibres, lymphoid

tissue and even cartilage.

This would account for the two hard lumps.

At fifteen months, the child probably had an acute throat infection which involved the tumor and caused its rapid growth.

Such an infection would account for the temperature and blood picture.

Tumors of this nature in the neck probably spring from remnants of the embryonal branchial clefts.

Some years ago, a patient of mine gave birth to a child with a small cyst under the side of the tongue, which increased in size very slowly during the first year of life, the child being otherwise normal. At about the sixth month, I referred the child to the late Dr. James Bell, then surgeon-in-chief to the Royal Victoria Hospital of Montreal, who advised against operation.

When the child was about a year old, the tumor grew very rapidly and extended down through the floor of the mouth to the side of the neck. At this stage, a French surgeon undertook to remove the growth. The child died on the operating table.

Dr. E. C. Junger, Soldier, Iowa. I am tempted to give up the discussion even before I have begun, and my effort is due to my confidence in the editor who would print nothing unless it had clinical value. The rapid growth of the tumor appears to me rather extraordinary and I never saw or heard of a similar case.

In my early practice I was consulted for a vascular tumor on the back of the neck of a six-months-old child. On the top of the growth was a superficial slough. Mere attempt at probing resulted in profuse bleeding, and, as the child was puny, I made weekly injections of hot water to produce fibrosis. After the tenth injection, the tumor began to slough off. Today, the patient is a grown woman, in good health, and with a scarcely perceptible scar to tell the story.

The clinical picture and the blood-findings in this case—I refer to Surgical Problem No. 1—suggest malignancy and I feel we have a case of lymphosarcoma.

As for the reason, I recall an incident from my student days. While assisting a physician during vacation, he and all other practitioners of the town were called in to see a banker's wife with an obscure illness. Unable to agree on something definite, the banker dubbed the faculty "educated guessers." I feel like an "educated guesser" as far as this problem is concerned.

Dr. Edmund D. Levisohn, Chicago, Ill. I feel that the symptomatology outlined in the problem is extremely meager for the establishment of a diagnosis, for nothing definite is given by which one can eliminate tuberculous and luetic infections.

The leucocyte count is not much beyond the limit of normality for an infant of fifteen months. The apparent anemia of a 50 percent hemoglobin content coupled with 89 percent of polynuclear neutrophils at once suggests a leukemia. The rest of the blood findings are comparatively normal.

To my way of thinking, we confront, for differentiation, an infection or acute exacerbation of a simple, chronic adenitis on one hand and a lymphosarcoma on the other hand.

My "guess" in this case is lymphosarcoma, but, of course, nothing less than corroboration, histologically, would please me under similar circumstances.

Editorial Comment

One of our correspondents wrote me a letter which I can not publish, but which I will discuss, citing enough to justify what is to come. The doctor discussed the case satisfactorily but made two statements: first, that the disease under consideration, whatever its exact character may be, is so rare that the average reader will benefit little from the discussion; and, second, the data are entirely too limited to justify any attempt at diagnosing the condition.

I have not written Dr. Strosnider, nor have I asked him to furnish us additional data, for the reason that I deemed his problem very interesting as he presented it and has scientific and practical interest for reasons which I will discuss.

I have received quite a number of problems of which I can not make use, although many have been excellently prepared. A problem suitable for this department need not refer to a rare or even complicated condition, but it should not be so trivial or commonplace as to appeal only to a junior medical student. The question of rarity is

always a relative one. Dr. A. may have seen at least fifty neck tumors in one year and he may have encountered diagnostic difficulties in quite a few, while Dr. B. will have seen only a few tuberculous lymphatics of the neck, or a leukemia or pseudo-leukemia, in ten years. This magazine tries to be of use to both Dr. A. and Dr. B. and, as both have varied preferences, we are doing the best we can, as far as material is concerned, to strike a happy medium.

The proof that this problem is interesting is evident from the discussions sent in by General Acheson, Dr. Crack and Dr. Levisohn. While Dr. Levisohn, in the main, agrees with General Acheson, Dr. Crack arrives at an entirely different diagnosis. I might go a step farther and quote statistics. I have had eighteen discussions sent in. Ten made a diagnosis of lymphosarcoma, one of infected cyst, one of carcinoma, and six voted leukemia. Each of the correspondents failed to give their reasons and, so, I can not do any more than cite them for the purpose of showing the variety of opinions. I think most of my readers will agree with me that this fact alone is *prima facie* evidence that the problem is interesting.

I find myself in a very undesirable position with this problem for the simple reason that I admit my inability to make a diagnosis. But, that does not dismiss the matter. We have here a serious problem and, as I began writing this comment, I asked myself what I would do if a child with a growth of the kind described were brought to me.

Of course, without an exact diagnosis, there can be no thought of rational treatment. Is the tumor benign, is it malignant? Assuming the latter, and granting even the impossibility of making an exact diagnosis, the question of therapy becomes a pressing one, for we are between the Scylla of risky surgery and the Charybdis of doubtful physical therapy, e. g., radium applications, electrocoagulation, etc.

The microscope? I have my doubts. I am also a good deal of a coward when it comes to babies. I have a suspicion that excision of a small piece from a growth of this type—a comparatively simple matter in an adult—is almost as risky as a radical extirpation. Then, there is the problem of certainty. In my rather limited experience with pathologists, I have had too many disappointments not to make me something of a skeptic when it comes to laboratory

reports of certain tumors. I could write enough to fill the entire issue of this Journal to show how the specialists disagreed, notably in cases when malignancy and syphilis were the factors to be determined.

A Wassermann would have helped us. Maybe Dr. Strosnider would have had that test made were he in doubt. He, no doubt, knows the child's antecedents. Besides, the growth, as described, does not jibe with a luetic adenitis.

The blood count is here and gives us no information whatever. There is anemia, I grant, and there is an increase of the polynuclear neutrophils, but that, to me, is meaningless. We can accept nothing definite from the blood picture.

Now, as to the physical appearance of the growth. I think that Dr. Strosnider's description of a congenital tumor of the neck, cystic to the feel, with two hard lumps in the center could have been enriched by mentioning mobility, exact site and real or apparent connection with the deeper structures, but I did not ask Dr. Strosnider for this information because I felt that we can get along without it.

In all cases of tumors of the neck which are not clearly benign, or due to specific infection, but which appear to be malignant or at least suspicious of malignancy, it is also of importance to determine whether the tumor is primary or secondary to some other growth. I have had the great satisfaction of being called upon to operate for a small carcinomatous infiltration of the neck after the patient had been seen by a number of local surgeons. I was not satisfied with the diagnosis and began a thorough search for the *causa causans*, and was rewarded by finding a cancer of the middle turbinate. But, in this case, we have reason to suspect that the tumor was primary.

We are given a valuable diagnostic point by being told that the tumor was on the side of the neck. That helps because we do not have to think of struma, meningocele, meningoencephalocele, etc.

We can rule out fibroma and neurofibroma because they are tough and of slow growth. Fibrosarcoma of the deeper structures would have produced difficulty of deglutition and other violent symptoms to attract attention before the child was fifteen months old.

I think that leukemic origin can be excluded because in leukemia the blood picture would have been characteristic and

the general symptoms so pronounced as to draw attention to the general condition, rather than the tumor. A leukemic child is a constitutionally sick child.

We can rule out all cysts, even a cavernous angioma, blood cysts and the like, because they would have been rather easily recognized by physical examination.

The fluctuating feel and the determination of the "kernels" fit a lymphosarcoma. But, we are not sure. I do not even know that lymphosarcoma is congenital. There are men who say it is. I have had no opportunity for observation. I think that possibly this diagnosis, too, is not correct. Fifteen months seem a long time for a child to go with a malignant disease with scarcely any symptoms.

We do know positively that there is such a thing as cystic lymphangioma of the newborn, and that, in many of these growths, one can feel, through the soft contents, fibrous structures which may or may not be the "kernels" described by the contributor. Such cysts have a tendency to grow in extent until they appear to embrace the entire neck. Whether we had such a cyst which became irritated and infected through some unknown cause remains problematic. Certainly the findings of the surgeon—spongy tissue—contradicts the cystic character and confirms, to a certain extent, the diagnosis of a malignant lymphoma. On the other hand, the dark brown, thick liquid may also be the contents of an infected cyst. We hope Dr. Strosnider will enlighten us further on this problem.

Problem No. 3

Presented by Dr. Isaac E. Crack,
Hamilton, Ont.

A man, aged 32, consulted me last Christmas for a cough, slight sore throat and "cold". Examination showed some redness of throat but otherwise was negative. Pulse and temperature were normal.

I was called to see the patient December 31, because he was "not so well". The patient was coughing, but otherwise nothing could be found. Pulse 80, temperature 98°.

In the course of routine examination, I found a wide scar in the median line above the pubis, with a hernia. The patient gave the following history: About fifteen years ago, he was treated for "indigestion," for six weeks, and when his condition became grave, a surgeon was called in who evacuated a large abscess, drainage tubes being used for a period of six months. He was

told that the appendix had "drained away".

At the time of my visit, the patient admitted that his "cold was better," but that he suffered from severe abdominal pain and that he had vomited once.

In the same afternoon, there was marked tenderness a little below and to the right of McBurney's point, but no distention or rigidity. Temperature 102°, pulse 104.

Required: The proper management of this case.

Problem No. 4

Presented by Dr. Edmund D. Levisohn,
Chicago

Patient, male, aged 37, has had, for about three years, a tumor, about the size of an

English walnut, just below the right mandible, half way between the angle and symphysis. This tumor enlarges and contracts at times and causes him slight pain.

This patient had a radical tonsillectomy, ten years ago. Otherwise there is nothing interesting in his history.

An x-ray taken of the jaws shows merely that a dentist had removed two teeth which, it was claimed, showed signs of apical absorption, but their removal had no influence on the tumor.

Blood count, Wassermann and uranalysis reveals nothing abnormal.

Requirement: Diagnosis and treatment of the growth.

Prayer of the Physician

He Pleads for the Joy of Healing

O God I pray that I may have absolute intellectual honesty. Let others fumble, shuffle and evade, but let me, the physician, cleave to the clean truth, assume no knowledge I have not and claim no skill I do not possess.

Cleanse me from all credulities, all fatuous enthusiasm, all stubbornness, vanities, egotism, prejudice and whatever else may clog the sound processes of my mind. These be dirt; make my personality as aseptic as my instruments.

Give me heart, but let my feeling be such as shall come over me as an investment of power, to make my thoughts clear and cold as stars, and my hand skillful—strong as steel.

Deliver me from professionalism, so that I may be always human, and thus minister to sickly minds as well as to ailing bodies.

Give me a constant realization of my responsibility. People believe in me. Into my hands they lay their lives. Let me, of all men, be sober and walk in the fear of eternal justice. Let no culpable ignorance of mine, no neglect nor love of ease, spoil the worth of my high calling.

Make my discretion strong as religion, that the necessary secrets of souls confided to me may be as if told to the priest.

Give me the joy of healing. I know how far short I am of being a good man; but make me a good doctor.

Give me that love and eagerness and pride in my work without which the practice of my profession will be fatal to me and to them under my care.

Give me a due and decent self-esteem, that I may regard no man's occupation as higher than mine, envying not the king upon his throne so long as I am prime minister to the suffering.

Deliver me from playing at precedence, from the hankering for praise and prominence, from sensitiveness, and all like forms of toxic selfishness.

Give me money; not so little that I cannot have the leisure I need to qualify into my service; not so much that I shall grow fat in head and leaden in heart, and sell my sense of ministry for the fleshpots of indulgence.

Give me courage, but hold me back from overconfidence.

Let me so discharge the duties of my office that I shall not be ashamed to look any man or woman in the face, and that when at death I lay down my task I shall go to what judgment awaits me, strong in the consciousness that I have done something toward the sanity, health and happiness of all people, toward alleviating life's tragedy.

Amen.

FRANK CRANE.

Chicago Daily News, Jan. 13, 1925.

Clinical Notes and Practical Suggestions

Income Tax Information

By M. L. SEIDMAN, C.P.A., New York*

How To Fill in the Individual 1924 Income Tax Return

ASSUMING that a return is to be filed, the next thing to be done is to obtain the proper return. (See previous article.)

As all the items on the small form are also on the large form, we will here discuss how to fill in the large form and thereby automatically cover the small one as well.

The first item under income is called "salaries, wages and commissions, etc." Here should be shown all compensation, for services, received during 1924. This includes bonuses, etc. Space is also provided for the deduction for expenses incurred in connection with the services for which the salary is received. Traveling expenses, for instance, are deductible. Where deductions are claimed, a detailed list must be made of them in schedule F of the return.

Item 2 is income from business or profession. This does not appear on the small form, since persons having a business or profession are not to use the small form. Under item 2 would come all income derived from a business owned by a taxpayer. This does not include a corporation or a partnership business. The net income from professional fees should here be shown. In any event, Schedule A must be filled out, showing how the net income from the business or profession is computed. The explanation of this schedule will form the basis of a subsequent article.

Item 3 covers income from interest, and is subdivided into two parts. The first is income on bank deposits, corporate bonds, etc., and the second is interest on taxfree covenant bonds, upon which a tax was paid at the source. The total of both these items should reflect all the taxable interest received during the year.

A word of explanation might be in order with respect to the interest on taxfree,

covenant bonds. Some bonds contain a provision that the corporation issuing them will pay to the government the income tax of the bondholder on the bond interest, to the extent of 2 percent of the interest. S. W. Straus bonds, invariably, have such a provision. Here is how it works out. Assuming that a \$1,000 bond bears 6 percent interest, the bondholder collects \$60.00 a year. The corporation issuing the bond, in addition to paying the interest, pays to the government 2 percent of the \$60.00, or \$1.20 for the account of the bondholder. This \$1.20 need not be reported by the bondholder as additional income, but what is more, can be taken as a credit against his own income tax. It is for that reason that a separate statement is called for of the amount of interest on such bonds.

Item 4 is income from partnerships, fiduciaries, etc. The income shown here must agree with the return filed by the partnership or fiduciary. Where the partnership sustained a loss, the individual can take his pro rata share as a deduction. The important thing to remember here is, that the individual's return must tie up with the partnership or fiduciary return.

Next on the return is the provision for rents and royalties. Here should be shown the net rentals received by the taxpayer for the use of property belonging to him. In computing the net rentals, all ordinary and necessary expenses incurred, including depreciation on the property, may be deducted. However, the deductions must be explained in schedules B and F.

Where the taxpayer lives on his own property, the rental value of the premises need not be reported as income. On the other hand, the expenses, except interest and taxes, can not be deducted. Where the taxpayer occupies only a part of the entire residence and rents the other part, a proportionate amount of expenses can be deducted.

*Of Seidman & Seidman, Certified Public Accountants, New York City.

Questions and Answers

Sale of Business:

Q. I sold my interest in my business for \$6,000. The profit was \$3,000; the balance was cost of merchandise. I took long deferred notes to close the transaction. Should I state the entire \$6,000 as income in making out my return, or should I only state \$3,000, the actual cost of the merchandise? Also, shall I include in the return the notes as a whole, or wait until due and paid.

R. E. T.

A. Only the profit, namely \$3,000, need be returned by you for income tax purposes. Unless the notes have no fair market value, you can not wait until the notes are collected. If they have a fair market value, you need consider them only at that value and adjust your profit accordingly.

Investment Loss:

Q. About four years ago, I invested \$6,300 in a concern which has since gone into the hands of a receiver. Please advise me whether I am entitled, under the law, to deduct this from my income when filing my income tax report.—O. W. Z.

A. The loss on your investment can be deducted, and your deduction should be taken in the year in which the investment becomes worthless.

Personal Expenditures:

Q. I would like to know if deductions are permitted and how to determine the amount of deduction in each case, of the following articles: (1) cigars, cigarettes, smoking tobacco, theatre tickets, watches, rings and eyeglasses. (2) I understand that deduction of 1923 state tax from federal tax is permissible. Is this correct? (3) Are union (trade) dues deductible?

C. W. P.

A. (1) The amounts expended for items you mention are not deductible as they are purely personal expenses. (2) State taxes are deductible on the federal tax return. (3) Dues paid a union are likewise deductible.

Exemption for Support of Parents:

Q. My two brothers and myself each contribute \$20 per month which we send monthly to our parents in Scotland, who are up in years and unable to earn their living. We are anxious to know if we are allowed exemption individually or whether the exemption only goes to one.—D. J.

A. Only the one who is the chief support of the dependent can deduct the exemption. In your case it is apparent that you and your two brothers are equal contributors. Under the circumstances, none of you could claim the exemption. It would be necessary for one of you to make more than 50 percent of the total contribution for that one to be entitled to the exemption.

Straus Bonds:

Q. I hold a Straus bond which has a tax-free provision in it up to 4 percent; that is, the Straus Company pays 2 percent at the source and refunds the other 2 percent to me. How shall I treat this in my return?—J. A.

A. The 2 percent refunded to you should be reported by you as additional interest.

You can take as a credit against the tax due by you, the 2 percent that has already been paid at the source for you.

Worthless Bank Stock:

Q. Suppose Mr. A. owns a certain amount of bank stock for which he paid at the rate of \$100. Now, suppose that the bank fails and A. is called upon to pay an assessment at the same rate, that is, \$100 per share. Can Mr. A. charge off this amount at the rate of \$200 per share as a loss with regard to the Federal Income Tax? If so, at what place on the tax blank should he make the entry?—C. E. S.

A. Since the bank stock is totally worthless, the \$200 per share can be charged off as a loss on your Federal Income Tax return. If you are reporting on the long form for income over \$5,000, the deduction can be taken as item 13. If you are reporting on the short form for income under the \$5,000, the deduction can be included with "other deductions" item 8.

Residence and Rented Property:

Q. I own a two-family house; live on one floor and receive rent for the other floor. Heretofore, I have deducted all the expenses of the house but did not deduct anything for depreciation, thinking that one would offset the other. Would this be correct? Would cost of painting, shingling, papering and new set of plumbing fixtures to replace worn out ones be deductible in the amount paid for this work, as an expense?—J. H. S.

A. The method you have followed is incorrect. You should prorate all expenses, including depreciation, on the basis that the number of rooms not occupied by you bear to the total number of rooms in the house. Only such portion of the entire expenses are deductible.

The cost of painting, shingling and papering would be deductible if the expenditures were in the nature of ordinary repairs. The cost of a new set of plumbing fixtures would probably not be regarded as a repair, but as an offset against depreciation previously deducted.

Life Insurance Dividend:

Q. In the year 1924, I received from my life insurance company, in which I carry a life policy, what is called a twenty-year deferred dividend, which dividend is payable to the policy holder after paying premium for a period of twenty years. The dividend is approximately \$600. Of course, I continue to pay premiums on the policy for life, as the name implies, receiving after the twenty-year period an annual dividend of whatever sum the company declares, which sum can be applied toward reducing the annual premium. What I would like to know is whether I must report the \$600 deferred dividend received from the company with other corporation dividends, or is a deferred life insurance company dividend exempt?—J. P. H.

A. The deferred dividend is not taxable to you if it is really in the nature of an offset against the premium. It is only dividends on paid-up policies that are taxable, and from the description of the policy as you give it, the policy can not be regarded as paid-up.

Head of Household:

Q. I am a widower with no minor children, but I maintain a house, employing a person to do the housework, having her meals with us and going to her own home at night. Am I entitled to an exemption of \$2,500 as the head of the house?—W. J.

A. You are not entitled to the exemption as the head of a household. In order to be the head of a household, there must be a person dependent upon you, who lives with you. Both factors are absent in your case.

Bonus:

Q. My salary for 1925 totalled \$1,897.50. At the end of the year, I received from the company a bonus of \$165, making my total income \$2,062.50. One-tenth of my income goes to the Church or for charitable purposes. Last year, I paid \$204 on an endowment policy which I have had to give up entirely after having run one year. (1) Do I include the gift of \$165 in the amount of my total income as a basis for tax return? (2) Can I claim any part of the \$204 as a loss? (3) Is it correct to deduct my Church tithe from my total income?—M.

A. (1) If the \$165 was paid you as a gift and not for services rendered, it is not taxable to you. If, however, it was as additional compensation, it is taxed to you as such. (2) You can not deduct any part of the \$204 as a loss. (3) The Church tithe can be deducted from your other income.

Many Important Ones:

Q. (1) Must a dower right in money, and a legacy be included in income? (2) If a corporation or company fails to pay any dividend on money invested in their stock, can that be deducted as a loss? (3) How is the depreciation in value of real estate to be figured? (4) Who are the proper parties to whom to apply for the Federal Tax blanks? (5) What number of blank would be required by a person with only a small income from money invested and rent from real property?—E. A.

A. (1) Dower rights and legacies are not taxable as income. (2) No loss can be deducted for the failure of a corporation to pay any dividend. (3) Depreciation on real estate is figured on the cost of the building only, as land is not depreciable. The rate of depreciation is determined according to the estimated remaining life of the property at the time of its acquisition. (4) Federal Tax blanks can be secured from your local Collector of Internal Revenue. State Tax blanks can be secured from the taxing official of the State. (5) The Federal blank that would be required in the case described by you, would be Form 1040.

School Teacher:

Q. Is a man employed as instructor in a public school in the United States exempt from income taxes by reason of being so employed, even though after the regular deductions, he shows an amount that would, even in the case of an average clerk, be subject to taxation?—T. T. T.

A. Instructors in public institutions, established by the State, or City, where considered as State or City employees, are exempt from income tax to the extent of their income from such instruction. Any

other income that they may have is not exempt, and would have to be reported.

Margin Account:

Q. I have a margin account through which I trade in stocks. I bought some stocks and sold some short. My broker has credited me with dividends on stocks that I bought and charged my account with the dividends on the stocks that I am short. In making up my income tax return, should dividends on the stocks short be offset against the dividends that were credited to me?—D. C.

A. The dividends on stocks short can not be offset against dividends credited. The charge for the dividends on short stock is an addition to the cost of the stock to be covered. Dividends credited, however, must be reported in full.

Tax Exempt Earnings:

Q. (1) I received interest on City of Cleveland and Columbus bonds and also interest on Liberty Loan Bonds. If this amount is exempt from normal tax, should it be shown in our income tax report as gross receipts, and also in the deductions, or should it be left out of the report entirely? (2) Are the dividends from all corporation stocks exempt from the normal and surtax, regardless of the state under whose laws the company is organized? (3) Is every exemption, allowed when computing the normal tax, allowable when arriving at the surtax, except the personal exemption, whatever that may be?—P. & B. C.

A. (1) The tax exempt interest should not be shown as gross receipts and also in the deductions. However, the law provides that every taxpayer must make a statement on his return of the amount of his tax-exempt income. You will find a particular place provided for that purpose on the return. (2) Dividends from all corporate stocks are exempt from the normal tax if the corporation is organized under the law of any state in the United States. It is only as to dividends from foreign corporations that there may be a question. (3) In addition to the personal exemption that may be deducted in computing the normal tax, there are also dividends, interest on Liberty Bonds, and credits for dependents. None of these deductions, however, can be taken in the computation of the surtax.

Tax Free Covenant Bonds:

Q. We own a \$1,000 bond of the Chicago Railway Co., first 5s, due 1927. Reference to interest or taxes, printed in the body of the bonds, reads as follows: "Payment shall be made without deduction of any taxes which the Railway Company may be required to pay thereon, or retain therefrom, under any present or future law of the United States or any State, County or Municipality therein." In our opinion, would we, or should we report the interest we receive on this bond as income and be subject to income tax on it?—C. B.

A. The interest on this bond must be returned as income. You are entitled, however, to take as a credit against your tax 2 percent of the amount of the interest, since the Railway Company pays that 2 percent to the government for your account.

ACRIFLAVINE IN SURGERY

The following is a report of a case in which acriflavine was successfully used as a surgical dressing.

Patient: H. F., male, age 27; screw-machine operator.

History of injury: While working about his machine, the wrench which he was using slipped and his right forearm struck against a sharp tool, producing a deep, punctured and lacerated wound. His skin was very dirty at the time the accident happened.

Treatment: The wound and surrounding skin were carefully cleansed with a 1-1000 solution of acriflavine; a small drain made of umbilical tape was soaked in the same solution and introduced into the wound, which was closed with a metal suture and dressed with gauze also wet with the acriflavine.

Progress: The drain was removed on the second day and the wound dressed as before.

On the fifth day the wound was entirely healed and the man returned to his work.

The only application made to the wound at any time was 1-1000 acriflavine.

G. H. JOHNSTON.

Detroit, Michigan.

DR. JONES' CASE

(See p. 43, CLINICAL MEDICINE, for January 1925.)

Several discussions were sent in relative to the very interesting case presented to our readers in the January number.

Dr. Jones has seen most of these comments, and his further notes on the case appear at the end.

Dr. Geo. Acheson, Camden, Ala. I have read over the description of your very interesting case two or three times, and I am inclined to concur in your diagnosis. The symptoms are all those of acute irritation and functional disturbance of the stomach, with irritation of the vagus nerve and phrenic plexus by toxins absorbed from the stomach and duodenum. This causes medullary exhaustion, with the symptoms of dyspnea and shock.

Dr. Lake's diagnosis of "food poisoning" refers of course to the etiology. I see no reason to suspect embolism or pancreatitis.

I congratulate you on your treatment of this case; I do not know that you could have

done better. Possibly, however, pituitrin might have been given instead of adrenalin, and I think I would have given after the emesis a dose of castor oil, preferably in the form of Laxol.

You do not mention the blood pressure. I would expect it to be lowered.

Dr. George H. Candler, Chicago. Consideration of the rather meager facts presented by Dr. Jones, of Camden, leads me to express the opinion that his girl-patient suffered from an attack of acute indigestion—the chestnuts ingested being the immediate exciting cause. In these not rare, but always rather puzzling, cases, there is always marked pyloric spasm, and the impression upon the nervous system (via the "Abdominal Brain of Byron Robinson") is profound. The patient may even die within a short time in a "condition of collapse."

Prompt gastric lavage, the administration of hyoscyamine or lobeline sulphate to complete relaxation and copious enemata with heat to the epigastrium, are the essentials of treatment. Opiates in any form are contraindicated.

Frequently, the resultant gastric disorder is so marked that peptonized milk and clam bouillon are the only safe nutrients for a few days. Artificial digestants may have to be resorted to for a further period of two or three weeks.

Dr. W. V. Gage, Worland, Wyo. The case suggests anaphylactic intolerance to chestnut protein, with capillary dilatation in the lung as a cause for the dyspnea.

If Dr. Jones has a heroine for a patient, I should like to know what effect a second chestnut diet might have and, if the experiment is tried, I should be pleased to learn the effect of a hypodermic of 5 drops of 1-1000 adrenalin solution.

It would be interesting to know how long this girl will go before developing bronchial asthma.

Dr. John Clark, Lathan, Kans. Here is a common picture of the cases we all see of a sudden, severe illness, soon relieved and passing out of memory. I am expecting something else to follow here.

A healthy, robust female at puberty, suddenly ill with severe abdominal pain and collapse, which is relieved by opiates, and nervousness subsequently following. Her illness follows directly after eating chest-

nuts, which would suggest anaphylaxis, but she had been accustomed to the nuts, and, therefore, our interest does not center in anything she has eaten. These signals may come from the heart: angina, with no pain; aneurism; stenosis; atheroma of the coronary or some other artery. Pressure, due to a full stomach, which she had, could give us this picture. Embolism, in the superior mesenteric, could give a suspicious resemblance to this, but we do not get any mitral history or other septic trouble and there is no bloody diarrhea.

She is not too young to have gall-stones. Cholecystitis is probable, if this thing is repeated, but the signs should be carefully studied. Tabes should be held in judgment in spite of the clean slate given in the history; as, perhaps, should the neuroses, whatever that means. A simple colic or dyspepsia—a pylorospasm out of a clear sky—is too frequently accepted as the simple solution and the cases pass from memory.

This child's trouble, in my opinion, is an endocrine shock, with menstrual complex. She will probably have similar outbreaks.

Dr. Paul Jones, Camden, Ala.

Further Notes on History: There is no evidence of asthma, hayfever, lues, cardiac disease, allergy, nervous instability in parents or grandparents. She does not suffer from any of the above disorders. There were no symptoms of angioneurotic edema, before or after the attack. Has never had a serious illness. She menstruates regularly with no trouble. Was not menstruating at time of attack. Blood, after attack, showed 4,500,000 red blood corpuscles; 8,000 white; polys 75 percent; hemoglobin 80 percent. Blood pressure not taken.

Progress of the case: After the attack I put her on 1/100 gr. atropine sulphate every six hours, liquid diet, rest in bed, an enema twice a day. This diet was continued for two weeks, gradually increasing it. Have her now on a diet free from starches, greasy foods, and sweets. The attacks of dyspnea gradually lessened and the interval between attacks lengthened. At this time (three months later) she has had one attack in the last three weeks; very mild. A couple of doses of atropine relieved symptoms. However, she tells me that they tend to come on at the least exertion and especially if excited. She ate chestnuts 3 weeks after first attack, but did not suffer any ill effects.

I did not consider this to be a case of

angina pectoris because the pain did not radiate; it was over epigastrium and not over sternal region; there was no constriction of chest; and the attack lasted too long. Acute dilatation of stomach was dropped because of the lack of vomiting until forced; small amount of vomitus; and lack of swelling in abdomen. I considered obstruction of stomach and nervous instability; but in the former we have recurrent nausea, fecal matter in vomitus, and a peculiar type of pain. There was no history of hysteria, or nervous vasomotor symptoms.

This seemed to me to be a case of disturbance of the balance of the vagosympathetic system, with an irritation of the afferent fibres of the vagus, by toxins, having as its etiology anaphylaxis due to food poisoning. On the other hand, probably abnormal stimulation of the sympathetic system could have produced the same symptoms, with a depressed or normal activity of the vagus.

The recurrence of the milder symptoms could be due to a vagotonia maintaining the stomach in a condition of tonic irritability.

Editorial Comment

The discussion of this case has proved very interesting, and, if our readers will signify their desire for more of the same kind, we will endeavor to give it to them.

The writer saw a case, a year or two ago, which was similar to this in some points.

A robust soldier was brought into the hospital early one morning with rather acute epigastric pain and marked malaise, but no fever, tenderness or rigidity in the right lower quadrant. The blood count was normal.

The next morning he said he felt perfectly well and desired to be returned to duty. He left the hospital before noon.

About 5:00 p. m. he was again brought in with the most severe dyspnea the writer has ever seen, and with the face rather flushed, but with no other symptoms.

His mentality was perfectly clear, and remained so up to five minutes before his death, which occurred at 6:00 p. m., following a rapid failure of the circulation.

A very complete autopsy, including an examination of the brain, failed to show any gross pathology except a moderate dilatation of the stomach, which was, therefore, returned as the cause of death, although, to the writer it seemed somewhat inadequate.

It seems that such cases as this should

be very carefully worked out from the neurological and endocrinological standpoint, and fully reported for the information and guidance of others.

WHAT IS DISEASE?

Disease is changed function. Function means operation. Any change in the action or operation of the life-cells of the body is disease. There is just one disease—changed or altered function. The *various names* we have for the *effect* of this change of function are *not* disease, but names of *effects of disease*.

Why does function change? Because we violate the law of life by not replenishing or putting back into the blood-stream what it delivers to the life-cells, with every heart-beat.

The blood circulates to feed the life-cells. We in turn must feed the blood with the food we eat.

We eat to make blood, and blood, like cake, or pie, or brick, or bread, requires certain definite elements in relative quantities, just as does a cake, or bread, or neither cake nor bread can be made. If a cake calls for a teaspoonful of baking powder, and you put in none, or put in four teaspoonfuls, your cake will be something else than what was intended. So it is of the blood. Blood requires 16 elements in balanced combination and nature supplies them in natural substances, but man upsets and destroys that balance through removing some part of the substance, in preparation or cooking.
—*Motive*

METAPHEN IN THE PREVENTION AND TREATMENT OF COLDS

During December 1924, my attention was called to a new drug called metaphen. I was informed that the drug had been used to a limited extent by several physicians in the east, and that these men had become quite enthusiastic while using it for common colds.

We had just completed a survey of the frequency of colds among the children in the public schools and it was found that ninety percent suffered with colds once or twice during the months of September, October and November, so my mind was fertile soil for suggestions as to a simple means of preventing the common cold.

A supply of metaphen was secured and eighteen of my nurses were given a 1 to

5,000 solution with instructions to use three or four drops in each nostril night and morning as a preventive. The response was immediate and very gratifying. From this experience the plan spread to a great number of teachers and other school employees and finally to the children, until we had more than two thousand enthusiastic users, among whom were many who never passed over the holidays without a very severe attack of coryza, but who, while using the metaphen solution, experienced no difficulties.

Naturally, it then followed that there were possibilities for cure by the use of metaphen in the treatment of colds already developed; so, we prescribed it as a cure with gratifying results. The strength was increased to 1 to 4,000 and used three or four drops in each nostril every two or three hours. At the same time, we gave one grain of calcidin every hour with a cup of hot water until the patient was perspiring freely, then one grain every two hours. Seldom was it necessary to treat these cases past the second day.

In using metaphen, we advise one to tip the head sharply to one side immediately after its introduction into the nostril, so that the drug will pass over the pharyngeal mouth of the eustachian tube. This prevents any infection of the tube, with a possible later middle-ear involvement, so common in severe coryzas in this vicinity this year.

In all this number of cases, there is but one unusual circumstance, and that was in a woman, age 36, who used but one application of the metaphen to the mucous membrane of the nostrils and, about an hour later, developed a decided nervousness followed at night by insomnia and diuresis. The following day everything was normal.

CONCLUSIONS

That metaphen is as much a specific in preventing the common cold as quinine in the cure of malaria.

That as a cure for the common cold, together with calcidin, it has in our hands proven more efficacious than any other combination of drugs, shortening the duration of the attack by several days. As a preventative for middle-ear involvement, when used as here indicated, its value seems proven.

IRA C. BROWN,
Medical Director of the
Seattle Public Schools.

Seattle, Wash.

THE PAIN CYCLE

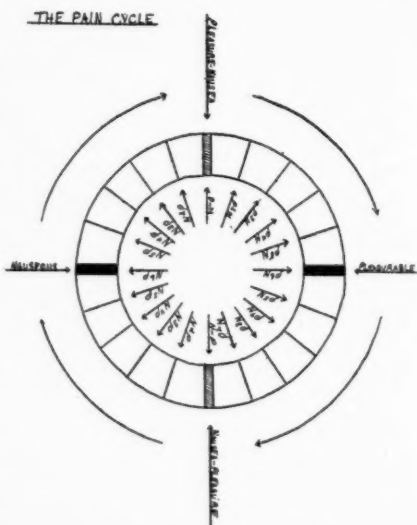
Pain is essentially a very complex sensation, difficult to analyze into all its minute individual components. It is quite easy, however, to split it up into two major sensations, which many recognize as the most important components; namely, nausea and pleasure. These, by themselves, are in no way simple sensations, they being almost as complex in their constitution as pain itself.

Most instances of pain have these two major sensations so nicely fused that it is hopelessly difficult to say which one predominates, or to describe the quality of pain in terms of pleasure or nausea. In the accompanying chart of the pain cycle, most instances of pain fall in the vicinity of P-N, or N-P. Perhaps the most simple case where the element of pleasure in a painful experience begins to become visible is the boy with the loose tooth in his mouth which he continually molests with his tongue. There is, of course, some pain, but the presence of pleasure is sufficient to compensate for that unpleasantness. This would fall in the category of P²N or P³N on the chart.

There are many experiences of pain that fall into each category on the cycle. Perhaps the most interesting is where the element of pleasure is so overwhelmingly present that people invite pain for the express purpose of enjoying the subtle pleasure that accompanies it in these instances. Seydel (*Vierteljahresschr. f. ger. Med.*, 1892, Vol. 2) tells us of a woman who repeatedly and purposely dislocated her arm in order to experience sensations of a very pleasurable and even lustful nature when it was being reduced, anesthetics then being unknown. Paullini (*Flagellum Salutis*) relates an instance of an insatiable fellow who, to experience what, to him, was the acme of pleasure, had himself whipped and torn by tongs until the blood flowed. Cox reports the case of a man who, for the purpose of deriving lustful pleasure therefrom, bared the upper portion of his body, closed his eyes and had girls walk over his naked breast, neck and face, urging them at every step to press hard on his flesh with the heels of their shoes. Sometimes he ordered one of the girls to stand on his breast, having the others turn her about until his skin was torn and bleeding from the contact of the heels of her shoes. This and the two preceding cases distinctly fall into P²N part of the

cycle where pleasure is so pronounced that the nauseous element is negligible.

An instance where nausea is the predominant element is when a person gets his fingers crushed in a slamming door. The pain is characterized in this case by a distinct feeling of faintness and sickness in the pit of the stomach. The element of pleasure is negligible, and this falls at once into the N²P part of the cycle. There are many such instances, and, of course, such experiences of pain are not invited as those where pleasure is the predominating element.



Explanation of the Chart

P.N., or N.P. represents pleasure and nausea combined equally with no predominance of either element. Most cases of pain are in this category. P²N indicates that pleasure is beginning to be distinctly felt; that is, it is just beginning to predominate over the nausea element. P³N is a step further in the direction of the pleasure part of the pain cycle. In the other direction, where the cycle swings towards the nauseous part, the pleasure element begins to decrease and the nauseous element begins to increase in a definite mathematical proportion.

Perhaps the most interesting cases are those where one predominating element gives place to another. That is, pain may start by being distinctly pleasant and quickly swing over to the other part of the cycle where it becomes characterized by nausea. A case is reported in the recent literature on masturbation where a man used to obtain pleasurable emotions by constantly pricking his glans penis with a long, sharp knitting needle. At the beginning of this practice, he used to experience distinct pleasure; but, after several minutes, the sensation became of a different nature, the

pain swung over to the other part of the cycle and he became nauseated. There are instances where pain first characterized by nausea gradually becomes pleasurable.

A rather interesting thought is this: Nausea may be nothing more than a phase of pleasure. That is, when pleasure becomes so intensified, so keen, it falls into the category of nausea. Bevan, in his work on "Pain," relates the case of a man who used to experience great pleasure during intercourse and, as the act went on, the pleasure became more intense, until towards the end of the act, he became overcome with a feeling of nausea and fainted. *Vica versa*, pleasure may be nothing more than diluted nausea. Pain, therefore, may be a combination of pleasure and nausea, either in a combination of fifty percent each, or one predominating the other, in either direction; that is, toward the pleasure part of the cycle, or the nauseous part.

EDWARD PODOLSKY.

Brooklyn, N. Y.

[We do not feel that any good purpose would be served were this journal to go deeply into the subject of sexual psychopathies, nor do we purpose to do so at any time; but, while we recognize that the conditions characterized by Dr. Podolsky as "P'N" are almost always cases of sexual psychopathy, we feel that this little article is of great interest as a thought stimulator along a line to which few of us ever give any attention whatever.—ED.]

TAKING PEN IN HAND

Why is the physician not a frequent medical journal contributor?

We wish that our readers would apply the thoughts in Mr. James E. Clark's article in *Medical Economics*, for July, 1924, to themselves. There are very few doctors who are not doing something which is a little different from what the other man does. They have something unique in the way of handling certain cases; of bookkeeping; of office arrangement; of employing office nurses; of making investments; of collecting their bills, etc. They have been carrying out these details so long that they see nothing extraordinary in them, despite the fact that they may be quite unusual.

Why not tell the editor? If the idea is stale, we will say so; if it is new, we will gladly publish it.

Many physicians have novel ways of spending their vacations. Why not tell the others about them? All of these things may seem small to the physician himself but they are of distinct interest to the others who are not doing them.

Get the writing habit. It aids in perfecting writing ability, and professional writing is the only legitimate and absolutely ethical method of advertising which is open to the physician.

CHARLATANRY IN SCIENTIFIC MEDICINE

Medical men who, like ourselves, have given up the active practice of medicine and yet retain a keen interest in both the theory and practice, occupy a peculiar position—that of onlookers, as it were—which may justify them in drawing conclusions on the trend of things and also may entitle them to express these conclusions. For a number of years, medicine has become an extremely complicated affair and the high price of being ill has assumed serious proportions.

Take, for instance, a paragraph in the *American Medical Association Bulletin* for November, 1924 (p. 266) in which the editor tells of a visit paid him by a young man whose wife was recently delivered in a city hospital. The room in the hospital cost him \$9 a day, the nurse was paid \$7 a day and her board at the hospital cost \$10 a week. In addition, there were the operating-room fee, the laboratory fee and the cost of dressings, along with a fee for anesthesia. The attending obstetrician was paid \$125. After going home, the mother developed a condition that demanded surgical attention and had to return to the hospital for an operation, with a \$9 room, a \$7 nurse, etc., and the surgical fee yet to come. During the first stay at the hospital, the infant in the case became ill in the night, with a slight hemorrhage. The hospital's attending pediatrician was called in and gave necessary instructions, which were carried out by the intern. The young husband had a bill for \$35 for the night visit to the babe, who has since been under the care of another pediatrician, who must direct its little life for some time.

Here we have a young man who is probably at the beginning of his career and who has taken to himself a helpmeet—the two of them planning to be good citizens and to contribute toward the welfare of

the country by producing at least one future citizen. Let us say that this young man earns fifty dollars a week. It may be more, but, then, it may be less. His wife probably stayed in the hospital two weeks, so that her room cost \$126; the nurse (at \$7 a day) \$98 plus \$20 for board; operating room, dressings, fee for anesthesia, we reckon at \$30, although the actual figure is probably higher; the obstetrician's fee, \$125. After her return home, the mother was forced to return to the hospital for an operation (a pity this necessity was not obviated by the \$125 obstetrician), where she stayed, say, one week, which cost \$63 for her room, \$49 for the nurse, \$10 for the nurse's board, the surgical fee to come; a night call for the baby at \$35, which may be called pretty steep; all of which foots up a \$546 fine imposed upon these two young people for wanting to be good citizens. The actual cost was probably considerably more.

We are wondering whether this condition, demanding surgical attention, that forced the young woman to return to the hospital for an operation, would not have been avoided if she had been confined at home and had had just a plain, general practitioner, who did not indulge in frills, but was clean and knew his business; if she had had a practical nurse at \$25 a week instead of the trained nurse who stood her \$59, including board, and who probably spent half the time gossiping with the other nurses or flirting with the internes.

We said that we do not know about the circumstances of this young man. If he earns only \$50 a week, we are sorry for him, because his wife is almost sure to require a physician's services for some time to come. Truly, the high cost of being sick is terrific!

The growing custom of referring patients to one, two or even more specialists or laboratory technicians for certain examinations is indulged in with increasing frequency and it is to be feared that this is not always a sufficiently well-considered procedure, nor is it always dictated by necessity. We are under the impression that very often the referring medical practitioner could quite well discover all that he actually needs to know if he would take the trouble to study his patient carefully with the means that he himself has at hand. The routine resort to specialists and laboratory examinations, entailing, as it does, a considerable financial sacrifice to

the sick, is one of the factors that have led people to employ drugless healers with increasing frequency and to pay their fees without a murmur, but to forget their physician's statements.

One of the laboratory tests, without which, just at present, no diagnosis is complete and the omission of which the truly up-to-date young medico would consider almost criminal, is the basal metabolism test, which is ordered indiscriminately, whether necessary for the elucidation of existing symptoms or not. Yet, in the end, *cui bono*? We are informed by William S. McCann, of Johns Hopkins Hospital ("Calorimetry in Medicine," Baltimore, 1924), that the measurement of metabolism for diagnosis is the least valuable of all the contributions of calorimetry to the clinic, the most abused and the most dangerous. We conclude, of necessity, that, where the basal metabolism test is ordered as a matter of routine, it often entails an imposition upon the patient for which no commensurate return is given. In fact, it is, we believe, a bit of inexcusable dishonesty practiced for the purpose of imposing upon the patient and often working a hardship.

It is perfectly right to utilize instruments and methods of precision wherever they enable the physician to establish a diagnosis, to discover what ails the patient, and to outline an indicated course of treatment. When it is a question merely of a play to the gallery, when the intention is solely to impress the patient and the patient's family with the doctor's erudition, with his up-to-dateness and with his scientific attainments, the practice smacks too much of charlatanry to be pleasant. As a matter of fact, many a physician who goes to untold lengths in his diagnostic methods does not gain his end; but, as a matter of fact, he disgusts his patients and arouses their suspicions of being an ignoramus and needing the assistance of his colleagues to tell him what's what. There are many people who have not forgotten the so-called good old days when the old family doctor sat down by the bedside, took the patient's hand to feel the pulse, looked at the tongue, perhaps at the eyes, and after listening to the history, made the diagnosis. Quite often (in fact, in the majority of cases) the course of events did not charge the old doctor with being untruthful; at any rate, the patient recovered under his ministrations and the doctor was highly thought of and respected. He was

even held in deep affection. And he never charged a \$125 confinement fee, nor did he insist on hospital attendance until it was really necessary.

We are afraid that the alleged scientific study of the patient is frequently overdone and that here we have another cause for the disfavor with which the medical profession is regarded by many people.

The worst of it is that the results of all these expensive methods of investigation are not in proportion to the cost. We do not hear of people recovering more quickly, more promptly, with less likelihood of sequelæ from serious maladies than they used to when we were young practitioners ourselves. We are not aware that septic complications after confinement have become less frequent, or can it be said that surgical interference is avoided as much as possible, both for the patient's own sake and for the sake of his pocketbook.

A whole lot of noise is made about the "unscientific" practices of the rank and file of the medical profession. Most of us read these lucubrations with a shrug of the shoulders, because the highly scientific practices of our ultra-modern colleagues cannot impress us at all. They are not convincing; to us, they do not look true or honest. In fact, we oldsters sometimes are afraid that the profession to which we belonged thirty and forty years ago, has become a trade that would be more honest by joining the federation of labor and establishing definite wage scales.

We have not, in a long time, seen anything more contemptible than the bills charged this young man for his wife's confinement. For the sake of the medical profession, we hope that the instance is an isolated one.

H. J. ACHARD.

Glendale, Calif.

[We are loth to take the view which Dr. Achard seems to hold as to the lack of honesty on the part of members of our profession, especially when many of the deplorable conditions to which he refers can, with equal logic and with more charity toward our brethren, be explained by their fondness for that popular American indoor sport known as "passing the buck."

It is probable that our profession, as well as all the rest of the world, needs a revival of the primitive virtues, such as diligence and sincerity, but it seems to us

that they still more urgently need a *renaissance* of common sense, a realization of personal responsibility, the self-reliance which comes with assured knowledge, and good, plain, old-fashioned "guts."

Let us so prepare ourselves that *we know what to do*, and then *do it*, relying on our own powers as far as they will go, and then referring the patient to the particular specialist, whom we are assured by *personal investigation*, can do what we can not, instead of letting them wander around to the exponents of one limited field after another, and finally fall into the hands of some irregular practitioner who knows what he can do, and does it, *himself*.—ED.]

CLEAR OUT AND CLEAN UP

Woman, married, age 34; two children, youngest one four years old; has been complaining ever since last confinement of painful ovaries and menstruation, which latter is variable in quantity; there is always a slimy, milky, tenacious vaginal discharge; cervix "just inside, the womb is so low;" walks stooped forward; felt better on her back, with legs drawn up; skin sallow and had a greasy feel; general run-down "married-woman" appearance; has been going to various doctors and they all want to operate and "fix up womb", and probably remove the ovaries. She could hardly walk, at times, on account of pain in lower quadrant of abdomen; very sensitive over pubes; irritating urine most of the time

The woman came in with her husband, who said, "I want you to examine my wife. She has been complaining for four years, since the last child was born. We have been to see physicians here and in Seattle and Portland, and I guess we'll have to submit to an operation unless you can do something to relieve her."

They did not tell me the above symptoms. I told them. Clinically it was written all over her in six-inch letters. I unloaded that colon and "took the load off the mule's back" and it got up. She is a well, laughing, good-natured woman now instead of a grouch. The uterus was up where it belonged last Tuesday. She isn't cured—isn't even well—but she feels fine; that is as far as most women go with treatment, anyway.

A. A. DAVIS.

Port Angeles, Wash.

INDICATIONS FOR THE SANOCRYSIN TREATMENT**By K. SECHER**

"As will be seen from the preceding chapters, the Sanocrysin has been applied in a most variegated series of tuberculous affections. We have accordingly been able to form a preliminary opinion as to the utilization of the remedy, and to the size of the doses.

"On the basis of experience thus acquired, we shall briefly put up the following indications for treatment:

"a. In all forms of pulmonary tuberculosis in adults and children, with application of a strongly varied dosage according to the character of the cases. A table of dosage is given from which instruction may be derived regarding how to treat the various stages of the tuberculous process, the doses being settled according to a thorough estimation of the general condition of the patient, and to the morbid anatomical findings. In applying the proposed doses of Sanocrysin, combined with the specific serum, we are able to carry through treatment in all initial cases without exposing the patients to danger. In more advanced cases, the Sanocrysin treatment, owing to its nature, must be perilous, while, in the most seriously attacked patients, it will offer only a slight chance of recovery.

"b. In all cases of tuberculous pleurisy, even in the obstinate chronic cases, we have succeeded in restoring the morbid conditions. In pleurisy, the Sanocrysin treatment will, in addition, represent an influence exerted upon the very foci in the lungs and lymphatic glands from which the tuberculous process will take its origin; a fact which renders it possible to prevent by means of a radical treatment any future attack of tuberculosis in these patients.

"c. In tuberculous adenitis in children and adults.

"d. In surgical tuberculosis. While intravenous injection must be considered the chief way of application in all other forms of tuberculosis, this technic has given no satisfactory results in surgical tuberculosis. On the other hand, a method of direct "infiltration" of a Sanocrysin saline solution into all parts of the affected tissue, has appeared strongly effective.

"e. In tuberculosis of the skin (lupus). Most peculiar results have been obtained on this field but no summary has yet been made; nor did we feel entitled to base any final opinion upon these results, considering

the strong variability characteristic of cutaneous tuberculosis. Therapeutic experiments are still in progress on this field."

[The above is reprinted from p. 418-19 of Dr. Holger Mollgaard's recent book, "Chemotherapy of Tuberculosis," and summarizes the position which the authors now hold with regard to the therapeutic application of Sanocrysin.—ED.]

LETTER FROM PARIS**From Our Special Correspondent**

Paris, December 22, 1924.

An announcement of great importance in the medical world has been made before the French Academy of Medicine by Dr. Albert Calmette, assistant director of the Pasteur Institute and an authority on tuberculosis, when he expressed the opinion that he has found a preventive of tuberculosis in a vaccine which he has discovered.

Numerous experiments on animals with the vaccine having proved it to be a harmless preventive, Dr. Calmette tried it on 217 children. Although the children chosen were particularly susceptible to the disease, none of them has developed indications of tuberculous infection during the eighteen months since. While many years will be needed to thoroughly test the vaccine, Dr. Calmette expressed confidence that, judging by tests already made, it is efficacious.

"People waste their money and the doctor's by calling him at night for things that do not matter, while on the other hand thousands of lives are lost through not sending for the doctor when it is really necessary in the daytime," said Dr. Naomi Tribe.

In the case of children, a mother should not try to diagnose the disease, but to decide how ill the child is. A young child under four years who can not be induced to sit up and play with its toys is ill enough for medical attention. If it allows its hands to be tucked under the bedclothes and keeps them there, it is very ill.

After the age of six months, a healthy child will turn its head to watch one's movements. Sometimes the child will not do this, and then it is very ill.

Older children, when beginning to be really ill, lie about on chairs. Another sign of illness is refusal to take food. The first thing a little baby does when it is ill enough for the doctor is to cease to smile; so long as it smiles nothing is wrong.

In a recent talk before the American Library Club, Dr. Laurent claimed that remarkable results have been obtained by the use of iodine on the tongue as a preventative against influenza. The experiment was made in Uganda by Dr. J. A. Taylor, after successfully using the same treatment in cases of spotted fever.

Describing the result, Dr. Taylor said that ordinary tincture of iodine was mixed with an equal part of native honey and two or three drops placed on the tongue at least every three hours or more frequently, if convenient. This was in November 1918, and in the following month, when disease became prevalent, the Europeans who took the iodine escaped the disease and none of the natives died. Among the others the mortality was high.

Those who wish to avoid cancer should abandon the vicious modern habit of physical idleness, says J. Ellis Barker, of London. Instead of taking exercise rushing about in motor cars, motor cycles and other vehicles, people should walk, ride, swing, engage in sports, practice deep breathing. Our nature requires natural exercise.

Tinned and frozen meats, dried and tinned milk, dried and overcooked vegetables, should be shunned, says Mr. Barker, also tinned soup, dried and bottled eggs, margarine, white bread, pudding powders, coffee extracts, bottled fruit drinks and flavorings, and cold storage meat and dairy products; we should eat freely, honest natural food, such as fresh meat, pure whole milk and butter, undefiled by chemicals; fresh eggs, cheese, salads, raw fruits, vegetables not overcooked and not cooked with soda, wholemeal bread, brown sugar and molasses; all of which are very rich in vitamins.

B. SHERWOOD-DUNN.

54 Bd. Victor-Hugo,
Nice, France.

LACTIGEN

In the spring of 1924, I had a case of recurring carbuncle over the right occipital

region in a fleshy young man 30 years of age. As I had received my first 5 ampules of lactigen, I injected one 5 Cc. ampule high on the buttocks and deeply into the muscles. I went to his home at 8 a. m., found he had slept all night and was still sleeping. I awoke him. He raised himself up and turned his face toward me as though nothing ailed his neck. He said the pain had gone in about 3 hours. He slept all day, waking for his meals, slept well the following night and the carbuncle disappeared. He desired another dose five days later fearing a return of the condition, but I waited, and so did the carbuncle.

Late in August, trouble started in his thigh. He had very little fever, but an abscess threatened. An x-ray showed periosteal infection. Sarcoma was thought of. *Staphylococcus albus* and *aureus* bacterin were given in about five places in his arm, together with three ampules (15 Cc.) of lactigen in the upper part of his buttocks. This produced a chill and stopped the pain, and nothing more was done for two weeks, when some pain returned and the treatment was repeated with the same happy results—patient cured.

This man, like many others, who do not respond well to bacterins, are poor resisters of infections; slow antibody producers, and may need thyroid and pituitary help for years. Lime, parathyroid and lactigen also assist.

Lactigen helps those who are run down. The reactions may be severe; if so, don't repeat too soon. The benefit may be delayed 10 to 14 days in chronic, asthenic cases. My rule would be to give 5 Cc. doses in chronic cases, and, if no general reaction ensues and no result is produced, increase the dose 5 Cc. by giving them 3 or 4 days apart until a general reaction is produced, and then wait some time.

Lactigen cures some cases of phlebitis (milk leg); stops the pain very shortly; and many people have asked me to repeat the treatment.

R. W. CHIVERS.

Jackson, Mich.

The Leisure Hour

Conducted by GEORGE H. CANDLER

A Sardinic Symphony

[Author's note: A friend, unfamiliar with the potency of the divine afflatus, asserted that it would be quite impossible to write a poem upon a canned sardine. Of course, it is—but look what's here!]

GAILY, in bright Sardinian seas, a little pilchard swam,

Regarding as poor anchorites, the oyster and the clam,

As herrings do, he went in shoals, both "hes" and "shes" together;

And doubtless too, made ardent love when it was pleasant weather.

He had a little head and tail, with shining, silvery tummy,

And filmy fins to fan his love when he and she grew chummy.

Then came a change; relentless fate came sailing in a schooner,

And scooped that pilchard from the waves, pronto! or even sooner;

Sardinians snipped his *caput* off, hot oil around him ran

And lo, the pretty pilchard lay—a *Sardine* in a can!

Surely, the fate of this poor fish should serve to make *us* humble

And realize that slickest Sheik may stub his toe and stumble;

Today we may serenely swim, and of our conquests boast—

Tomorrow's sun may find us "canned"—or nicely served on toast!

That was easy!

G. H. C.

Early Spring Spasms

Is it possible that *you* have already been up in the attic unearthing that old pair of waders and shockingly stained creel? Has some irresistible force compelled you to tenderly unwrap rods and uncase reels, and do ridiculous stunts with oil can, silk thread and copal varnish? Have you wrapped and rewrapped guides and tips, and gone around the house swishing a ten-foot fly rod to prove to yourself that it had not become ossified since it was laid lovingly away, on the last day of the open season for brook trout?

If you haven't done all this *yet*, it is about time for you to stop tuning in or seeking a synonym for temporary insanity, and get out your fly book, at least. True, the ice is still in some of the best streams and the tag alder bushes look very much like Philipino widows with their weeds missing (of course, I can only imagine what *they* really look like; but, they must be bare and brown). Still there is a tinkle of moving water around the bends and little rivulets are everywhere making their way brookwards through the marsh grass. A woodpecker taps hopefully on the old dead birch near that famous hole, and if you look closely you'll see that the ice along the banks is full of air holes and is splitting up in thin layers like the pie crust mother *used* to make before she got her hair bobbed. Everything points to the regular annual spring thaw and after that, me bhoy—the beauties!

You'll read this sometime in March, and April is only one month removed from the famous ides. Therefore, NOW is the time to get everything up to the minute—and snake 'em out in anticipation. There is absolutely nothing like doing *that*. The reality so often falls short. Year after year, at about the time there is daylight at five-thirty (p. m.), I begin to "tinker around" (as my esteemed family terms it) with rods, reels, leaders and flies, to say nothing of spoons, plugs, and "positively adorable" lures, which have been presented to me in the offseason by supposedly grateful female patients. Some of these look very much like dwarfed totem poles, and others resemble nothing so much as a cross between a jaundiced spider with the measles and a paralyzed polcat. Nevertheless, they are all guaranteed by the optimistic makers to catch fish when others fail, and, moreover, to be ab-solootely weedless! I am sorrowfully skeptical. Never, no never, have I seen a double or triple hook that would catch fish, that wouldn't rake up weeds or perversely sink its keen point in any old sunken snag that it could possibly encounter. Sometime, even, I have thought

that those "weedless" lures had a sort of seventh sense which enabled them to deploy and do these shameful things on purpose to lacerate the feelings of the animated object at the other end of the line. As a result, the said a. o. becomes more animated and emits songs, psalms and profane ditties regardless.

Of course, all this applies particularly to the plebeian plug-caster or live-bait bass man, but he "gets his" just about the time the trustful "troutist" is putting patches on his waders and hying homewards. By that time the gnats are really going good, and the "skeeter" and black flies are "doing their darndest" to make things interesting ashore and afloat.

Let us refrain from dwelling upon these more distant joys, however, and talk about early trout fishing.

The earlier the colder, the sooner the sloppier; that is one of the greatest and most pulling of the charms of brook-trout fishing in early spring. It is such a distinct change to leave a steam-heated flat, and go up to some shack in the wilds, there to shiver at night that, in the early morning, you may "squilch and squalch" (terms copy-righted) through ooze and slush and snow to a stream which is bank-full—or fuller—of fast-running, chocolate-brown water. Then it is another decided change to step down into this and not know from one minute to the next whether you will keep your feet on the bottom or sit there. That lends a peculiarly piquant point to the procedure. To sit in five feet of freshet water, in May even, is, to say the least, an "unusual sensation." And that is what we go after—new sensations. We invariably get 'em. I, for one, wouldn't miss them for the world, though I am frank enough to say that I don't go quite as early or as often as was my wont before the eighteenth amendment made such experiences doleful disasters. In the OLD days, we just "had another," emptied our boots, wrung out our shirts and jumped in again. Now, one can only jump in! We are all going to do that anyhow regardless, so we'll even let sleeping flasks lie.

I had an idea when I started this article (or thing) that I would say something about what to take with you to catch the early trout with, and how to use the things you do take but, after thinking over many past experiences, I have come to the conclusion that every man knows just what he wants to take and will do whatever he feels like

doing, when he gets to whatever water he may fancy. He will, despite vehement vows to the contrary, still go equipped with a ten- or even eleven-foot rod and try to fish four-foot, brush-lined Wisconsin streams therewith. He will carry sixty-eight-eyed flies and forty-eleven-snelled hooks, and use most of them. He will rig himself out with a new, many-pocketed, eton-cut jacket, and a hat with its band stuck full of nice "new" flies, and on his blithesome back will be a creel and a telescopic landing net. His guide, innately courteous, may go out similarly accoutred but, within an hour, will sneak off, find the old cane-pole, cautiously remove his creel, extract a can of wur-rums from a pocket and "go to it." When he rejoins his "sport," he will probably have in his side pockets more real trout than you ever knew were in that stretch of water. As he is now carrying the fly rod and makes a few casts in the open places, you naturally think he is some better than you are. If you are really sapient, you'll sneak off too—in the opposite direction—this year, and fool the old fellow. Don't forget though, and come back with the cane pole—or worse, with the fly rod and a worm on the hook where a fly oughter be. That is very damning evidence!

The seasoned old-timers, who are getting a little bit stout and lazy and therefore fish the larger trout streams and open waters, will proceed according to Hoyle, get their fair share of fish punctiliously on the fly, and come home at noon and eve to swap yarns, smoke innumerable pipes and measure their trout, even to the fraction of an inch, against the other fellows'. Verily, they have their reward!

But, the fellow who just wants to fish because winter has gone and he can't keep away from the woods and running water, likes best to worm his way through brush, tree-tops, and alder swales, and yank 'em out with a short line wherever he can find a chance to drop a fly decently. For such work, the shorter the rod (within reason) the better, and it is extremely desirable to carry one or even two extra tips to the scene of action. A small, pocket fly-box (books are a nuisance because your hands are never, never dry) will carry all the flies you can possibly need in any one day, and a couple of extra leaders take up very little room. The net to use (if you really must have a net) swings under the arm, being held close to the body when not in use, by a rubber band. Waders should be new and full length—one never knows where the

holes are—and the more wool socks worn, the greater the comfort. Somewhere in your apparel, conceal a small can, anyway, of humble, pink worms and brazenly display a few, small, trout hooks (undressed) and a spoon or two. I would hate to tell how many trout have come out on a flied spoon for me when the most dextrous and persistent presentation of beau-ti-ful flies failed to elicit even a rise.

The early waters at best are muck-laden, drab and drear and it often takes the glimmer of a spoon (one CAN put a worm on it) to lure the beauties to the basket. No matter just how you get the twelve and fourteen inchers (so long as it is by legitimate hiking and wading and with a one-hand rod) it is 'eavenly to gaze upon them sparkling, even in death, and to narrate to trusting friends (who think "fishing" means to sit on a bank or in a boat and wait for something to bite and pull down the bobber) how this one came out on an unusually long line and that one took the top fly just as you were landing that other monster through a brush jam! And such things do happen. That's what draws you back year after year—that is why NOW is the time for you to begin to get ready.

Perhaps, after all, I am more of a bass man than a trout fisher, but if anyone wants to "go up" early and renew his youth and faith in things mundane generally, I may be able to give him a few practical pointers. You see, I have even sat down in a May stream. It was distinctly damp and cool, too. Once I have had to swim. That was moist also. It is most absurd, of course, but there is nothing I want quite so much at this moment as the chance to do either, or both, those stunts again, and (D. V.) I feel that I shall. That's my luck; but then I also do get trout. And the experience makes the later bait-casting for bass from a nice dry and warm (often HOT) boat, peculiarly pleasing.

In conclusion: To borrow a bit from the broadcasters, if you like this kind of stuff, drop me a postal (telegrams are not necessary) and I'll not only answer questions but be encouraged to tell you directly just how to go after the BASS—big or small mouthed, "pound for pound the gamest (and trickiest) fish that swims."

P.S. Don't mention pickerel, please. If you must discuss these "wolves of the waters," call 'em Great Northern Pike. They don't mind.

THE JOY OF CONTESTS

Presumably, most things we do in this world have for their basic purpose a somewhat reasonable "Why?" But the why of a prize contest always has been, and still remains, with me an unanswered conundrum.

Quite recently, a well-known firm which caters extensively to the medical profession instituted a prize contest in a little publication edited by them and serving as a house organ. The contest consisted in submitting the best title to an unnamed picture. There were to be four main prizes of one hundred, seventy-five, fifty and twenty-five dollars, respectively; then a group receiving, ten, five and one dollar for the most suitable title to the picture.

As is my custom in such matters, I steered clear of the contest. However, when the printed result of the contest reached me through the regular distribution of this little house organ, I couldn't resist taking notice. For, according to my preconceived anticipation, the contest ended just as I expected it would—just as all contests I have ever witnessed have done, and probably will continue to do: The first should have been last and the last should have been first; the judges, as usual, trying to excuse themselves on the grounds that, you can't please everybody.

However, I took the liberty of asserting my own opinion. I forthwith wrote the firm a letter telling wherein I differed from their judges. I gave them a revised list of prize winners, as I viewed the situation. I put their first, or hundred-dollar prize into the one dollar list; their second prize first; one of the five dollar prizes second; one of the ten dollars prizes third, and one of their main prizes fourth.

Now, here is where the strange and interesting part comes in. I received a very satisfactory reply to my letter. I was complimented on my revised list with an almost frank admission that I had selected a better list than their own judges had done; and more remarkable still, was the also frank confession that their first prize was offered to the one who displayed the simplest or greatest negative intellect in its conception. This, mind you, on the basis that a larger majority of the simple-minded could comprehend it than would have been the case had the really, most intellectually keen answer been chosen for the first prize winner.

Now, this is "The Leisure Hour," in which to contemplate things appropriate to such

spare time. For your edification, therefore, during this leisure hour, I propound the question: Why is a prize contest?

P. S. There will be no prize offered for the best answer to this question.

F. N. RICHARDSON,

Cleveland, Ohio.

I AM

The man who signed your birth certificate and the man who will sign your death certificate. I stand by you in the hour of greatest happiness and the hour of deepest sorrow. I listen to your confessions not breathed to another soul, and keep them inviolate.

My life work is consecrated to serving and administering to your physical wants, night or day, rain or shine. I am at your beck and call. I sacrifice my rest, my pleasure and my strength to comfort you.

As I wend myself past the year stones of life toward the eternal sunset, I am striving to be more charitable, more unselfish, and more kindly towards my fellowmen.

I am the first one you think of in time of sickness and the last one thought of in time of health.

I am not rich because I serve suffering humanity, which embraces the poor whom we have with us always.

I am the man who cannot pay his grocery bill, his dry goods bill, his drug bill or, in fact, any bill on earth until I am paid by you. I am,

Your Family Doctor.
Medical Insurance.

"MUSIC HATH CHARMS"

If you are suffering from ingrowing personality, try a scherzo.

For hardening of the heartiness, take a hypodermic injection of melody.

When your temper tempers your temperament intoxically, a syncopated jazz tune is a sure-fire antidote.

When you are ill in the future, don't be surprised if your doctor writes you a prescription like this: "One Valse Caprice mixed with one Hungarian Rhapsodie flavored with a tincture of Polonaise Militaire. Heaping tablespoonful three times a day."

Or, according to his diagnosis, one like this: "Two fluid ounces of 'The Bee's Knees,' five and a half drams of 'Them High-Brown Blues,' with three grains of 'Mammy's Little Alabama Coon.' To be taken in half a glass of water after meals."

Musical Therapeutics is the latest science. A. G. Gulbransen of Chicago, its pioneer apostle, says music is a panacea for mental ailments and an effective remedy for many bodily maladies.

"An ounce of music is worth a pound of pills," said Mr. Gulbransen, who is the world's largest piano manufacturer and attributes his health, wealth and happiness to music. "There is a whole pharmacopeia of curative medicine in a song. Melody lifts one out of one's self and out of sickness. It is psychological epsom salts. It purges the mind and stimulates and revivifies the physical functions. It is as necessary to the home as hygiene. The registering piano is on a par with the registered pharmacist as an agent of health. A doctor should carry a roll of music and a roll of bandages in the same case. Music is good medicine. It cures when all drugs fail."

Your back aches because:

"Kidneys," said the herb man.

"Prostate," said the G. U. doctor.

"Flat-foot," said the shoe doctor.

"Pelvic trouble," said the gynecologist.

"Infected teeth," said the dentist.

"Mal-adjustment," said the osteopath.

"Impinged nerves," assured the chiropractor.

"It don't ache," emphasized the Christian Scientist.

Medical Herald.

"Dorothy went out to a nearby woods to play," says a contributor to the Boston "Herald." "Soon she came in, out of breath from running and flushed with excitement. 'Mamma, mamma,' she cried, 'give me the listerine, quick!' 'What's the trouble?' inquired her mother. 'Oh,' exclaimed Dorothy, 'I've found the prettiest little black and white kitty in the woods to play with, but he's got halitosis.'"—*Outlook.*

And as a concluding thought—

Why should'nt "the spirit of mortal be proud?" He comes here in his skin and goes forth in a shroud.

ADIOS!

Diagnostic Pointers

CANCER OF THE TONSIL

Cancer of the tonsils is one of several diseases that produce chronically enlarged, painful and ulcerated tonsils. At first, the cancerous tonsil is not so large, or so sore, as the ordinary enlarged tonsil of chronic inflammation. It seldom occurs before the age of 35 years.

The signs of cancer of the tonsils are hardening and superficial ulceration of a portion of a slightly enlarged tonsil. Cancer almost always affects only one tonsil, while most other diseases of the tonsil affect both tonsils. The hardening and ulceration of the tonsil may not be very marked, but these signs, once existing, are progressive. The disease usually makes rapid progress.

Sarcoma of the tonsil produces a very marked, persistent enlargement of one tonsil, which steadily increases in size, but is not very prone to ulceration.

TUBERCULOSIS

"Suspected tuberculosis" is a perfectly justifiable diagnosis. There is no sharp dividing line between tuberculous *infection* and tuberculous *disease*.

DR. MORRIS LEWISOHN.

TUBERCULOUS SYNOVITIS

In tuberculous synovitis, stiffness of the joint appears before there is any pain; while, in pyogenic joint infections, pain appears before stiffness.

DR. E. J. BURKHEISER.

A chronic, insidious disturbance of the function of *one* joint, in patients under ten years, is tuberculous.—DR. C. A. PARKER.

APPENDICITIS

Study all presumptive operative cases *thoroughly*, and diagnose appendicitis from; pyelitis, ureteral stone or stricture, acute vesiculitis, pleurisy, pneumonia and pancreatic disease. This is not all the conditions which may confuse, but indicates the need for study.—DR. C. M. WRAY. [Herpes zoster of the lower intercostal and lumbar nerves should be remembered as a possibility.—Ed.]

TUBERCULOSIS

The high points for tuberculosis are, early infancy, puberty and old age.

DR. JOHN RITTER.

DIABETES

The danger, in cases of diabetes, is not due to the sugar present in the blood and urine but to acetone and betaoxybutyric acid.—GORDON.

ACNE

There is good reason to believe that there is a dysfunction of the thyroid and other endocrine glands in acne.

LEVIN AND KAHN.

DIGESTIVE DISORDERS

Conditions going on for a long time, with symptoms not changing in character or gravity, are generally functional.

MAX EINHORN.

ABDOMINAL RIGIDITY

When abdominal rigidity is due to *in-trathoracic* disease or injury, there is a momentary relaxation at the end of expiration; this is not found in abdominal cases.

C. F. VALE.

PUS

Iodophilia Reaction.

A blood smear dried in the air, but not heated, is exposed to the vapors of iodine crystals until brown. It is then mounted in Turk's iodine mounting syrup (a saturated solution of levulose) and examined with the oil immersion lens. All blood cells are stained yellow, but, if pus is present in the body, brown granules or globules will be noted in the cytoplasm of the leucocytes or in the blood platelets.

CANCER AND TUBERCULOSIS

In diagnosing pulmonary malignancy from tuberculosis, remember that in the former there is absolute *flatness* on percussion over the lesion, rather than dullness; and that the sounds of moisture, so characteristic of tuberculosis, are *absent*.

DR. MORRIS LEWISOHN.

TUBERCULOSIS

Tuberculous meningitis often follows synovitis, if there has been a trauma to the joint or surgical intervention to correct the deformity.—DR. BURKHEISER.

APOPLEXY

If apoplexy occurs after fifty-five years of age, it is probably nonluetic, and due to a primary focus of pyogenic infection or a nervous stigma which results in a high vascular tension; if before this age, it is probably due to syphilis.—MURPHY.

APPENDICITIS

Appendicitis must be diagnosed from the abdominal crises of purpura and angio-neurotic edema.—M. G. SEELIG.

HEART-BLOCK

If the heart beats *regularly* at a rate under 35 per minute, it is due to complete heart-block.

If it is *regular* and the rate is between 40 and 50, partial heart-block is present.

DELOACH.

ALBUMINURIA

Robert's Solution.

Saturated Solution Magnesium Sulphate	80.00
Acid Nitric, C. P.	20.00
Mix.	

Put $\frac{1}{2}$ inch of this solution in a test tube and carefully overlay with urine. A sharp, white ring at the point of contact indicates albumin.

WOOD ALCOHOL POISONING

A history of sudden blindness, associated with vomiting and abdominal pain is typical enough to make us suspect wood alcohol poisoning.—S. L. ZIEGLER.

THORACIC AND ABDOMINAL LESIONS

In the absence of thoracic signs, abdominal pain, associated with movements of the *alae nasi* during respiration, indicates a thoracic lesion.—A. MCCLANNAN.

PERITONITIS

The heart sounds and inspiratory murmur can be heard, by auscultation, over all parts of the abdomen in most cases of acute peritonitis with free fluid.

P. W. ASCHNER.

TYPHOID

Sore throat is not at all uncommon and should never lead us astray. It is due to the fact that this disease invades *all* lymphatic structures, and not merely those of the belly.—DR. R. B. STOLP.

AMYLOID DISEASE

Holmgren's Complex.

1. Hour-glass deformity of the nails.
2. Enlargement of the liver.
3. Sclerosis of the veins.

These conditions may sometimes be found, also, in advanced pulmonary tuberculosis.

ACETONE AND DIACETIC ACID

Rothera's Test.

1. To 10 Cc. of urine, in test tube, add ammonium sulphate crystals to saturation.
2. Add 2 or 3 drops of a fresh solution of sodium nitroprusside.
3. Add 2 or 3 Cc. of strong ammonia. Mix by inverting tube.

Positive reaction. A deep permanganate color, spreading upward from the crystals. The rapidity of formation and depth of color indicates quantity of acetone or diacetic acid present.

BRONCHITIS AND BRONCHOPNEUMONIA

In bronchitis, the leucocyte count will be from 12,000 to 14,000 per cu. mm.; in bronchopneumonia about 20,000.

Current Medical Literature

TARTAR EMETIC INTRAVENOUSLY

We are all familiar with the use of "antimony and potassium tartrate" as an emetic and as an expectorant, but its use as an intravenous remedy is probably unfamiliar to some.

In the *Annals of Clinical Medicine* for November, 1924, Dr. Willis A. Whitman, of Columbus, Ohio, makes a very interesting report of his experiences with this remedy.

Frontz and Ross had reported that, as a result of their clinical studies, they believed that tartar emetic, administered intravenously, was a specific for *granuloma inguinale*. Following their suggestions, Whitman used it in three cases of this disease, of long standing, with almost dramatic results.

Feeling that if such a stubborn condition as inguinal granuloma would yield to this remedy it might have further possibilities, he used it in a number of other conditions, and believes that it will yield equally satisfactory results in many chronic inflammations of the eye. In cases of refractory adenitis, various skin diseases and traumatic and miscellaneous ulcer cases a fairly good result was obtained, but the effect was not startling.

The technic is as follows: Make a one-percent solution of C.P. *Antimonii Et Potassi Tartras* with sterile distilled water (using the care needed for any intravenous solutions). Begin with a dose of 4 Cc. (representing 40 mgm. of the drug) and increase the quantity by 1 Cc. each day, up to a maximum of 10 Cc., which dose should be repeated upon alternate days until the desired results are obtained. This drug is very irritating to the tissues if it escapes under the skin.

THE DOCTOR OF THE FUTURE

In the *Medical Herald* for December, 1924, Dr. George E. Vincent, of the Rockefeller Foundation, New York City, does some interesting speculating as to what will happen to the medical profession in the future. He makes some suggestions as to how the average doctor may be prepared for eventualities:

"The doctor may make a place for himself as a counsellor of health. Personal hygiene will always remain the largest element of a public health program. After the environment has been sanitated and communicable diseases subjected to the maximum control, there will remain the vast field of personal health for which no organized public functionaries can assume responsibility. If the general practitioner will recognize this opportunity, if medical schools will prepare him for the service, if the community will recognize his value in this new relationship, an inspiring career of opportunity and usefulness will open up before him. This will mean, however, a gradual change of attitude, an increasing interest in the normal, a study of the effects upon health of diet, exercise, mental attitude, recreation, family and social life. All the finest qualities which have made the general practitioner successful in the past may be trained to even greater account in the future."

STUDIES ON THE PHYSIOLOGY OF THE PARATHYROIDS

H. A. SALVESEN—Translated by Lester R. Dragsteadt, M.D., from *Acta Med. Scand.*, 1923, Supp. VI., *Surg., Gyn. and Obst.*, Nov., 1924

The removal of three parathyroid glands in dogs (eight experiments) did not produce tetany in any case. The blood sugar remained unchanged, the alkali reserve was usually lowered temporarily, and the serum calcium was reduced from 10 to 7 mgm. per 100 Cc. of blood.

The subsequent removal of the fourth parathyroid gland in six of the dogs and the removal of four parathyroid glands in four furnished the material for studies of what the author designates as "complete parathyroidectomy." Five of these dogs died of tetany within three and one-half days and one in twenty-two days. Four were saved by repeated intravenous injections of calcium chloride, a milk diet, and in some cases the administration of calcium salts by mouth. When tetany occurred, the blood calcium was always found to be below 7 mgm. per 100 Cc. of blood. The dogs that were saved by the calcium treatment developed tetany when placed on a meat diet but recovered again when given milk.

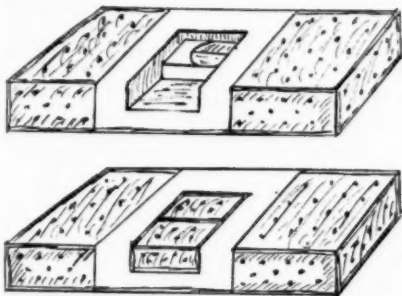
Milk freed of its calcium was not found effective in preventing tetany. During the

stage of latent tetany, the nitrogen metabolism was normal but the carbohydrate tolerance was lowered. A subcutaneous injection of 3 gm. of guanidine chloride caused convulsions but had no effect on the blood calcium.

The author concludes that the cause of the symptoms of parathyroid insufficiency is calcium deficiency.

MATTRESS FOR THE BEDRIDDEN

So much difficulty is encountered in the handling of patients who are strictly confined to bed, especially in the work of the general practitioner, that it is believed that the special mattress, reported by Dr. Joseph F. Montague, of New York, in *Surg. Gynecol. and Obst.* for January, 1924, will prove of great and general service.



The accompanying drawings are self-explanatory, and no reason is seen why any mattress cannot be reconstructed along these lines at moderate expense. In the drawings the mattress and recess are shown covered with a rubber sheet.

No discussion appears to be required, as every physician who has treated bedridden patients will at once appreciate the comfort and convenience, both to the patient and those who care for him, from the use of this device.

THE ENDOCRINES AND SURGERY

Dr. G. W. Crile, of Cleveland, in the November number of *The American Journal of the Medical Sciences*, publishes an illuminating paper on the above subject.

Some of his conclusions follow:

"All of the endocrine organs, with the possible exception of the pineal, have this in common—that a hypersecretion may be safely corrected by the extirpation of a portion of the gland and that a hyposecretion may be compensated by the administration of the essential elements of the secretion."

"A certain group of diseases which are almost invariably associated with excessive emotion, physical strain, infection, auto-intoxication, etc., are looked upon as kinetic diseases, since in them there exists a diminished or excessive activity of one or more of the glands of internal secretion. Among these are neurasthenia, hyperthyroidism, cardiovascular disease, diabetes, Bright's disease and acute acidosis."

"After adrenalectomy, death soon follows; after thyroidectomy, life continues only in so far as it is expressed by continued heart action; a sluggish circulation; an impersonal existence."

DENTISTS GETTING BACK TO NORMALCY

In the attempt to cure secondary disease, there is little doubt that many serviceable teeth have been needlessly sacrificed, according to Thomas L. Gilmer, M.D., D.D.S., ScD., of Chicago, in the *Dental Cosmos*, for October, 1924.

Eight years ago, according to Doctor Gilmer, he made the following prophesy: "It is not improbable that the damage done by oral foci in the production of systemic disorders is at times overestimated, since over-enthusiasm is generally the rule following new discoveries in medicine."

This prophesy has been fulfilled, for, according to Gilmer, we still recognize the evil influence of oral foci in the production of metastasis, but we realize that it is unsafe to focus the attention too exclusively on the teeth, neglecting other parts of the body which not infrequently harbor far more serious foci of infection than do the jaws.

From a wide clinical observation, coupled with association with groups of physicians in the study of focal infections, Doctor Gilmer has found that while in some cases the elimination of oral focal infections has resulted in almost miraculous cures, in many other cases in which all mouth infection had been improved, no visible improvement in the patient's condition was observable.

Careful studies have been carried out of the conditions present about the apices of teeth, resulting in the demonstration that pathological zones about the roots of pulpless teeth do not always contain bacteria, and that those that do are often so completely walled off by a connective tissue capsule and sclerosed bone that dissemination of germs is made difficult. Nature's effort to build a barrier against the spread of bacteria and bacterial products is found in the complete and partial enclosing wall of granulation tissues. In some instances,

even when a part of the apex of a root has been denuded, the cementum covers it when the pulp canal has been thoroughly sterilized and filled.

There is increasing evidence in dental literature that there is a definite and growing trend away from the recent ruthless extraction of teeth sacrificed in the vain attempt to remove foci of infection suspected as being the causes of pathologic conditions in other parts of the body. Doubtless, the teeth are frequently to be blamed, but the tendency has been to focus too much attention on the oral cavity, and not enough on possible foci of infection in other parts of the body.

SURGICAL TUBERCULOSIS AND THE WORLD WAR

The experiences of the World War, including the work of the draft, made available such a vast mass of statistics as has never before been collected. From this material many studies are now being made, one of which is embodied in the article under discussion.

Commander Bainbridge, U.S. Navy, in *The Military Surgeon* for August, 1924, has carefully reviewed the Draft Records, the findings of the Discharge Boards and the reports of the Surgeons General of the Army and Navy, and collected and studied such data as deal with surgical tuberculosis, and has prepared an article of the utmost value to all who have occasion to treat this type of cases or who are engaged in public health work.

An abridged summary of his findings follows:

1.—In the approximate number of 2,753,922 men, being about four-fifths of the men between eighteen and thirty years of age who were physically examined and whose examination furnished the statistical information on defects found in drafted men, compiled from the draft records, published by the War Department, the disease group of tuberculosis constituted 4.5 percent of the defects found.

2.—From the viewpoint of physical examination standards, the term tuberculosis includes pulmonary tuberculosis, suspected tuberculosis or weak lungs, and tuberculosis of other organs. Altogether, 9,312 cases of tuberculosis of other organs than the lungs were recorded.

3.—Last year's admission rate of military

patients to army hospitals for treatment of this disease, all forms, was 3.53 per thousand for the entire army, the total number of cases reported being 727, as shown by the report of the Surgeon General, U. S. Army, to the Secretary of War, 1922. At the end of April, 1922, there were 11,346 tuberculous veterans hospitalized, at government expense, in the United States.

4.—There are now over 1,100 associations in the United States concerned with the preventive movement against tuberculosis, and the annual expenditure of these preventive agencies engaged largely in the treatment of tuberculosis aggregates over thirty million dollars annually.

5.—During and since the World War, many cases of osteoarticular, glandular and urogenital tuberculosis have been observed, and these manifestations of surgical tuberculosis are now explained as the secondary evidence of a latent systemic infection with the tubercle bacillus.

6.—From the industrial and accident insurance viewpoint, it is noteworthy that experience has shown the improbability of a traumatic origin of tuberculous lesions which do not manifest themselves until several months after the injury.

7.—Cases of osseous tuberculosis are divided into a larger group with joint involvement and a smaller group without joint involvement.

8.—The differential diagnosis of joint tuberculosis from gonococcal arthritis, syphilis, and rheumatic infections, is very important, especially with regard to the timely institution of appropriate therapeutic measures. It is noteworthy that syphilis and surgical tuberculosis may exist together in the same patient.

9.—Shaft tuberculosis, a rare localization of tuberculous bone disease, often closely simulates suppurative osteomyelitis. Aside from its chronic and usually afebrile course, tuberculous osteomyelitis is usually associated with a number of other tuberculous lesions.

10.—With respect to treatment of surgical tuberculosis, a radical change has supervened in so far as the chief aim now is the suppression of the causative factor, with establishment of favorable conditions for restoration to health. Conservative physiotherapeutic and medicinal measures have largely taken the place of local radical surgical interventions in the treatment of tuberculosis of the bones and joints. Individualizing procedures are perhaps called

for in these cases more than in any other surgical affection.

11.—Vaccine treatment, especially with autogenous vaccines, has yielded favorable results in the treatment of surgical tuberculosis, in the experience of some observers. Opinions are still at variance concerning the value of tuberculin injections in these cases.

12.—Sunlight treatment of surgical tuberculosis is now conducted in the United States on a systematic basis, especially in cases of osteoarticular tuberculosis and cervical adenitis. Heliotherapy has also yielded favorable results, in the experience of American observers, in the treatment of tuberculous peritonitis.

13.—In forms of glandular tuberculosis, for example, cervical adenitis, Roentgen-ray treatment is, in some cases, successfully utilized and offers good general, as well as cosmetic, results.

14.—Tuberculosis of the male genitourinary apparatus, notably tuberculous epididymitis, like other forms of surgical tuberculosis, often reacts very favorably to general and climatic treatment. In tuberculous processes which are still restricted to the epididymis and testicle, good results may be anticipated from Roentgen-ray treatment, which should always be combined with tonic and general physiotherapeutic measures.

15.—Surgical tuberculosis in all its forms can be eliminated, in large measure, through the suppression of respiratory infection with the tubercle bacillus, as aimed at in a concerted endeavor at Community Health Improvement now under way in the United States.

16.—The progressive lowering of American tuberculosis figures is certified by assurances coming from the United States Public Health Service, from life insurance companies, and from the boards of health of all our states and larger cities.

SPECIFIC TREATMENT OF ACUTE GONORRHEA

Dr. L. H. Roblee, in *The Urologic and Cutaneous Review*, for Sept., 1924, deplors the indifferent and perfunctory manner in which cases of Neisserian infection are handled by many general practitioners, and even by some urologists, and pleads for the same individualized care in the diagnosis and treatment of these cases which we give to a case of pneumonia or diphtheria.

The treatment is general and local, the general treatment consisting of a light and nonirritant diet; as much rest as is possible; the ingestion of large quantities of liquids; and the administration of sufficient alkalies to keep the patient's secretions mildly alkaline.

The remedies for local use are today practically confined to dyes and silver salts. The doctor recommends that two of these remedies be used at alternate treatments (e. g., metaphen and argyrol) and that, if satisfactory results are not produced in a reasonable time, the combination be changed.

Stress is laid upon the great value of prophylactic measures after exposure, and upon the necessity for carefully instructing the patient as to the extremely contagious nature of his disease and the measures for the protection of those with whom he comes in contact.

IRON IN SPINACH

Spinach is popularly believed to contain considerable quantities of iron, and some interesting experiments have recently been carried out by Aaron Lichtin, Ph.G., and reported in the May, 1924, number of the *American Journal of Pharmacy*.

The results of these experiments show (1) that an ordinary portion of cooked spinach contains about 5 milligrams of iron, or one-third of the daily amount required to maintain the body in health; and (2) that the greatest proportion of iron is found in the canned vegetable, next in the dehydrated form, and least in the fresh leaves as bought from the gardener's truck.

OLD REMEDIES AND NEW FOR SYPHILIS

In the discussion of a paper by W. A. Pusey, in *The Atlantic Medical Journal* (January, 1925), Dr. Jay F. Schamberg made the following interesting remarks:

"The abortive treatment, in the proper sense of the term, is applicable only to primary syphilis with a negative Wassermann. Cases seen in any stage, after this, should be subjected to three years of treatment. In a general way, I should recommend three courses of one of the arsenobenzenes, with alternate courses of mercury or what is probably superior, bismuth. In Finger's Clinic in Vienna, bismuth is now used instead of mercury. Bismuth, in the light of our present knowledge, appears to be more therapeutic and less toxic than mercury. We

have now three or four remedies against syphilis, and it is fortunate that we have, for the more arrows that we have to our bow, the better position we are in to destroy the elusive spirochete.

"In recent years an attempt has been made to supplement the spirocheticidal drugs with the use of foreign proteins, to strengthen the defensive mechanism of the body. You may be quite surprised to learn that it is possible to heal up gummatous lesions of the skin by the injection of milk proteins. In Vienna, paresis is being treated by the induction of artificial malaria through the injection into the patient of malarial blood. The results thus far reported are extremely encouraging. Perhaps, this type of treatment will be found to be of value in conjunction with the usual methods. I do not believe it is possible at the present time to set forth a standardized formula for the treatment of syphilis. The treatment must be an individual one. In the light of my own experience, I have no fear of the use of the arsphenamines in early syphilis. The treatment, however, must be sufficiently energetic and should be combined with the use of other spirocheticidal remedies, especially bismuth."

DIAGNOSIS OF SYPHILIS

The physician's problem, today, in connection with syphilis, is to make an *early* diagnosis and give adequate treatment *early*.

It is of great importance to the patient, in many cases, to be sure of an accurate *negative* diagnosis.

A very large percent of penile sores are luetic, but not all, and every patient is entitled to an absolute diagnosis before treatment is begun. In securing this, the history is important, but the chief reliance is now upon the laboratory.

There are six methods of laboratory diagnosis of *primary* syphilis, of which two are readily available; the darkfield examination and the Kahn precipitation test and Wassermann test upon *secretions from the lesion*. These two tests will give correct diagnoses in 91 percent of cases, while the darkfield alone will give such results in 78 percent.—Dr. R. Ruedemann, Jr., in *W. Va. Med. Jour.*, Dec., 1924.

CANCER RESEARCH

[Believing that all physicians are, today, interested in having a *thinking*, if not a working, knowledge of the extensive experimental work which is being done in the effort to find a cure for cancer, we are here presenting abstracts (translated) of the

work of one of the prominent European investigators, Dr. Ferdinand Blumenthal, of the Berlin University, together with his picture.—Ed.]



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DR. FERDINAND BLUMENTHAL

Neoplastic Bacteria in Human Cancer

Up to the present it has not been possible in human cancer tumors to find parasites by which one can experimentally induce tumors in plants and animals which have the biologic and histologic properties of carcinoma or sarcoma. The bacterium *tumefaciens* of Erwin Smith, Nellie A. Brown and C. S. Townsend, obtained from plant tumors, was used by Fredemann, Benedix and Magnus, and was found in several cases (that is, in meningitis and in the feces of three patients quite ill with intestinal disease), but could not be found in human or animal tumors. Continuous negative results in trying to grow neoplastic parasites from human tumors has led most investigators to the conclusion that in human cancer parasites do not have a direct bearing.

The fact that inoculated bacteria in the case of tumor growth do not appear to multiply, and can only be cultured with the greatest difficulty, raised the question whether the tumor cells, as far as the biology and anatomy of plants is concerned, did not

have the same autonomous growth as is assumed in the case of animal cancer cells. We finally came to the conclusion that, although in those cases in which the cultural evidence of *b. tumefaciens* did not succeed, this did not, with certainty, indicate an absence of parasites. The investigation led to the question whether *b. tumefaciens* is necessary for the growth of the tumor cells. In these investigations it was shown that the parasites are present practically only at the edges of the tumors, where the connection with good tissue is made. One might assume that also in human tumors the original parasites become latent, or even die. It is possible that the parasitic activity takes place only in the precancerous stage, while in the tumors themselves no tumor parasites may be found. If this should prove true, it would be necessary to revise our ideas concerning the non-parasitic basis of tumor growth.

We undertook the investigation of the question again because of an observation that, in a secretion obtained from a mammary carcinoma (scirrhous) which had been treated by light therapy, structures were present which were similar to bacterium *tumefaciens*. Cultures of these seem to uphold the suspicion that these were *b. tumefaciens*, or closely related parasites. Of thirty cases investigated we found them in twelve cases and never in hard closed tumors but only in more or less soft or ulcerated tumors of various types.

By inoculating mice and rats with pure culture, small growths were noticed at the injection site within a few days. These sometimes became as large as a pea. They remained thus for one to two weeks and then disappeared again. If they were extirpated before the reduction had begun, hyperplastic new formations were found in them. It was impossible to cause the growths to become larger than pea size. This method, therefore, did not lead us to the desired result.

The authors then made use of irritation by using kieselguhr adding thereto the edema secretion from the swollen arm of a cancer patient from which we had also obtained a culture L. By repeating our results on rats, mice and guinea pigs, the growths were larger, up to the size of a small cherry. These growths would disappear again. Microscopically investigated, the growths are partly carcinoma-like, partly sarcoma-like, but mostly of uncertain character. Small metastases were also

of similar character. The bacilli could not be made histologically evident. Cultures seldom gave evidence. By rapidly transferring the growing tumor to another animal we were able to carry it through four generations.

We therefore conclude that parasites which evidently belong to the same class as *b. tumefaciens* can be found in human cancer tumors (carcinoma, sarcoma). With the help of these parasites we could produce swellings in plants and in animals which in rats could be carried through four generations. Biologically these swellings are to be classed as malignant as they formed metastases, and this, from the second generation on, had a histological structure which was similar to the known mice and rat carcinoma. From the swellings in the first generation parasites were obtained only once, and never in the second to the fourth generations.

DR. FERDINAND BLUMENTHAL AND OTHERS.
Klinische Wochenschrift, Berlin, June 17, 1924.

Investigations of the Treatment of Sarcoma-Rats with the Extracts of Various Tumors
Blumenthal and Lewin, *Therapie der Gegenwart*, March, 1914, p. 115.

V. Leyden and Blumenthal, in 1902, laid the experimental and clinical basis for the treatment of severe ulcers, which today is known as immunization, handling of tumor autolysate, or vaccine therapy of cancer. The method consists in treating the cancer patient with an extract of a tumor of the same kind and histology: sarcoma with extract of sarcoma; carcinoma with extract of carcinoma, etc.

In their first publication, the authors described the cure of a dog, which had a rectal carcinoma and which was treated by an extract of rectal carcinoma from another dog. Furthermore, they noted the halting of metastasis in cases of far advanced human cancer. A cure was not then described.

V. Leyden in 1906 described an apparent cure by Leyden and Blumenthal of a pancreas carcinoma in which this method was apparently successful. Other favorable reports followed, but sometimes not all the live cancer cells were killed in the extract and these produced cancer at the site of injection. Blumenthal heated the extract for three days at 39° C. and experiments on rats showed that these extracts did not produce new tumors, and that they were

extraordinarily effective. Since, on standing in the incubator, autolytic processes take place, the tumor extracts thus obtained were called tumor autolysate.

These results were substantiated by Carl Lewin, on rats, in 1911, and others have obtained effective extracts in various ways, these extracts being put into ampules, and used for subcutaneous injections.

It is interesting to compare the results with those obtained by the use of metals. The side effects produced by metals are practically absent with tumor extracts. Severe hemorrhages in the tumors were seldom found; softening followed by necrosis was even more rare. The more slow action of tumor extracts is an advantage, as indicated by the high percentage of cured animals which survived.

EPIDEMIOLOGY OF DIABETES

In an article in the *Archives of Internal Medicine*, for November, 1924, based on a very extensive research, Drs. Haven Emerson and Louise D. Larimore, of New York, present a study of diabetes mellitus, not, as might be construed from the above title, as an infectious disease but considered as epidemic diseases are considered, from the standpoint of its incidence by race, age, sex, geographical distribution, etc.

The conclusions reached are as follows:

1. Diabetes is increasing very rapidly, the increase being greatest among women of all ages, and among men and women over 35 years of age.
2. The Hebrew race shows the highest death rate and the negro race the lowest.
3. Diabetes is a disease of fatigued function in most cases.
4. Seasonal variations in death rates, calculated on a monthly basis, are marked and apparently significant, being highest in the winter months and corresponding with the prevalence of respiratory disorders.
5. Geographical distribution shows high rates where there are many people over 45, or many Hebrews, and low rates where there are many negroes. Geography *per se* seems to play no part.
6. Changes in the food habits of the people, particularly in the way of an increase in the carbohydrate intake and general overeating, are probably a notable factor in the increase of diabetes, by causing a fatigue of the function of sugar tolerance.

INSULIN IN EXOPHTHALMIC GOITER

In *The British Medical Journal* for October 25, 1924, Dr. R. D. Lawrence, of King's

College Hospital, comments on four cases of Graves' disease, which he treated with large doses of insulin. His comments follow:

1. Four severe cases of Graves' disease with hyperthyroidism were treated with large doses of insulin, 60 to 100 units a day. The insulin was well borne and caused no inconvenience.

2. Two of the cases were greatly improved, one being practically normal on discharge from hospital. In both cases, the disease was uncomplicated and of less than a year's duration, in women under 30. It seems unlikely that their improvement was spontaneous or caused by any factor other than insulin.

3. The two others were not essentially benefited, although one gained much in weight and felt better. They were cases of toxic adenoma of the thyroid rather than of simple Graves' disease, occurring in women of about 50 and of over a year's duration.

4. The treatment was carried on under strict standard conditions of diet and close blood sugar control, but, should its value become established, these should hardly be necessary.

5. The subject is still in its experimental stage, and these four cases are recorded now mainly in the hope that other workers may investigate its possibilities.

ANESTHESIA IN TONSILLECTOMY

In performing tonsillectomy, Dr. Charles C. Miller, of Chicago, reports (*Am. Jour. Surg.*, Dec. 1924) that he uses the following technic for anesthesia, in selected cases:

An hour before operation, a hypodermic of $\frac{1}{4}$ grain of morphine and 1/100 grain scopolamine [one H-M-C tablet does nicely. —Ed.].

At time of operation, inject sufficient 2-percent novocaine solution behind the tonsil to lift it slightly from its bed.

Injects the edges of the anterior and posterior pillars with just enough 1-percent solution of quinine and urea to make a slight ridge where the line of separation will occur.

Dr. Miller states that this last procedure, used with judgment in proper cases, is without danger, produces an analgesia which lasts for several days, and materially reduces the soreness of the throat which usually follows tonsillectomy, thus permitting the patient to take nourishment from the start, so as to conserve his strength, which is sometimes a matter of the highest importance.

New Books

MACKENZIE: "ANGINA PECTORIS"

Angina Pectoris. By Sir James Mackenzie, M.D., F.R.S., F.R.C.P. London: Henry Frowde & Hodder & Stoughton. 1923. Price \$9.00.

No one who is interested in diseases of the heart can afford to overlook the works of Sir James Mackenzie, who has probably done more research along these lines than any physician of the present generation, and has embodied the results of this research in a series of volumes (of which this is one) which will long remain classical works of reference in their field.

Doctor Mackenzie began the studies upon which this book is based more than thirty years ago, and has been patiently accumulating data ever since.

In the beginning of his studies he was confronted by the fact that there was no accurate and reliable information upon which to build. Angina pectoris is a disease characterized, primarily, by severe and agonizing pain, and, yet, up to the time the Doctor began his studies, there was no certain knowledge of:

1. What tissues or structures give rise to the pain.
2. What kind of stimulus could produce the pain.
3. How this stimulus was conveyed to the sensorium.

When these anatomical and physiological questions were cleared up, it was next necessary to determine:

1. What was the significance of the symptom-complex called angina pectoris.
2. What to watch in studying the patients.
3. What, exactly, is "heart failure."

The present volume presents not only the conclusions reached after long years of painstaking study, but also the methods by which these studies were pursued, and, if the book served no other purpose, it would deserve to be in the library of every physician as an exposition of the methods by which one should pursue any exhaustive clinical research work.

At all stages of the work, illustrative case reports, cardiographic tracings and other graphic methods are used to clarify and amplify the text.

No cardiologist can afford to be without this work, and, if every physician would

read it, it could not fail to elevate the general standard of the profession. It is an Oxford Medical Publication.

BOOKS FOR NURSES

Pediatrics for Nurses. By John C. Baldwin, M.D. New York: D. Appleton & Co. 1924. Price \$2.00.

A Textbook of Materia Medica for Nurses. By A. L. Muirhead, M.D., and Edith P. Brodie, A.B., R.N. Second Edition. St. Louis. 1924. Price \$2.00.

Anesthesia for Nurses. By Colonel William Webster, D.S.O., M.D., C.M. Illustrated. St. Louis: The C. V. Mosby Company. 1924. Price \$2.00.

In order that a nurse may successfully and adequately fulfill her professional functions, it is necessary that she have, at least, a working knowledge of the lines of treatment the attending physician intends to pursue, and what he expects to accomplish by the medication and other treatment which he prescribes. The above-named books will give her this knowledge along the lines covered.

Such books serve another useful purpose in furnishing to the medical student an elementary treatise on the various subjects, whose outlines he can fill in as his studies progress; and to the busy practitioner a reference manual by which he can refresh his mind as to fundamentals when time does not suffice for consulting the more elaborate and technical works.

CHILD-HEALTH LIBRARY

Child-Health Library. A series of ten books by practicing specialists of the highest standing, giving the latest and most authoritative information on every phase of child health. Edited by John C. Gebhart. New York: Robert K. Haas, Inc., Publishers (formerly Little Leather Library Corporation), 218 W. 40th St., New York. \$3.00 with pair of book-ends.

The physician is frequently asked, by young mothers and prospective mothers, where they can find a book which will give them simple and reliable information relative to the care of themselves and their children. There are a number of such books available but none, we believe, which covers the field so widely or in a manner better adapted to the purpose than this

series, gotten out by the publishers of the well-known "Little Leather Library."

The purpose of the series is to teach parents how to cooperate with the physician in promoting and preserving the physical and mental health of their children. The books are of the same small pocket-size and generally attractive appearance that has been made popular by the "Little Leather Library."

The titles of the ten volumes are as follows:

- I. Pre-Natal Care and the Baby's Birth. By Harbeck Halsted, M.D.
- II. Babies: Their Feeding and Care. By Louis C. Schroeder, M.D.
- III. The Neglected Age: The Child from Two to Six. By Bernard S. Denzer, M.D.
- IV. Dangers of the School Age. By M. Alice Asserson, M.D.
- V. Communicable Diseases of Childhood. By Stafford McLean, M.D.
- VI. Hygiene of the Mouth and Teeth. By Thaddeus P. Hyatt, D.D.S.
- VII. What Children of Various Ages Should Eat. By Lucy H. Gillett, M.D.
- VIII. How Children Ought to Grow. By John C. Gebhart.
- IX. Psychology of the Child. By David Mitchell, Ph.D.
- X. Educational Problems. By David Mitchell, Ph.D.

With these little books at hand, any mother of average intelligence should be able to so direct her own life and that of her children as to bring them up to be healthy and useful citizens.

"MEDICAL CLINICS OF NORTH AMERICA"

May, July and September, 1924.

For the physician who is so situated that he cannot enjoy the benefits to be gained by attending the extensive clinics in our large cities, the nearest thing to a substitute for such instruction is to be found in the clinical publications which are available, and among which this series is prominent.

The May number, which contains the index to volume 7, presents the teachings of the medical clinicians of McGill University, Montreal, Canada, of whom 23 have contributed to this number. Nine of the clinics deal with rare conditions, and the other fourteen with the sort of problems which the general practitioner meets almost daily, such as acne vulgaris, sciatic pain, pregnancy in heart disease, convulsions, etc.

The chapter on asthma contains a good paper on the role played by allergy in this disease, with lists of the foreign proteins which are usually associated (see LaForge's

articles in CLINICAL MEDICINE for December and January).

Under sciatic pain are considered cases of sacro-iliac strain and subluxation; sacro-iliac arthritis, acute and chronic; spondylolisthesis, etc., with suggestions for treatment.

The clinic of Dr. L. M. Lindsay, on nutritional edema, is of great interest, dealing with the untoward results which sometimes follow keeping an infant or child too long on a diet rich in carbohydrates and low in proteins, particularly when there is also a deficiency in the raw vegetable foods.

Two very interesting cases of intestinal syphilis are presented by Dr. D. S. Lewis, who emphasizes the fact that this condition is rather rare and simulates tuberculosis of the gut so closely that careful differential diagnosis must be made. The possibility of luetic lesions in this locality should not, however, be overlooked when dealing with an obscure case.

The July number contains the teachings of 35 of the prominent clinicians of New York, of which thirteen present rare conditions and the other 22, cases which any of us are likely to meet at any time.

Dr. N. B. Foster's clinic shows how frequently and how closely functional disorders simulate organic disease. In an analysis of 3,000 gastrointestinal cases, 22 percent were found to be functional, although many of them presented the symptoms usually associated with organic diseases.

The clinic of Dr. George Draper on "Endocrinology and Pediatrics" is very valuable and is well illustrated with photographs of typical cases of endocrine disorders in children. This phase of endocrinology deserves much more study than most physicians give it.

Dr. R. L. Cecil's discussion of "Colds" is of interest to every physician. He approaches the subject from the direction of bacteriology and immunology, and lays down the following rules for prophylaxis:

1. Try to get patients in good physical condition.
2. Clear up foci of infection, as tonsils, sinuses, etc.
3. Attend to the circulatory and nervous systems, by baths and exercise.
4. Free ventilation of living and sleeping rooms.
5. Gargle of 25-percent argyrol solution. (These are valuable as prophylactics, but useless in treatment.)

His treatment is outlined thus:

1. Rest, preferably in bed.
2. Simple diet.

3. Catharsis.

4. Mild analgesics, as aspirin.

5. Gargle of 25 percent argyrol solution. This may also be instilled into the nose with a dropper.

Dr. Foster's clinic on "Fits" contains much food for thought. He believes that all convulsive attacks are epileptic in nature, running the gamut up to the typical major seizure.

Every physician has many cases of hysteria, neurasthenia or psychasthenia, and therefore every physician will find matter of interest in Dr. George H. Hyslop's clinic on "Constitutional Inadequacy," under which heading he considers all cases of this sort.

As to the breaking down of nervous control, he classes them as:

1. Cases in which psychic stress was causal.

2. Cases in which physical stress was causal.

3. Cases in which no known cause could be discovered.

Under these headings, eleven cases are presented which are interesting and instructive to a high degree.

The September number contains instruction by 20 prominent clinicians of Chicago, a large percentage of whom deal with unusual conditions, such as aleukemic leukemia, splenomegaly, etc.

The clinic on sterility by Dr. Irving F. Stein, of the Michael Reese Hospital, is interesting. He presents the Rubin test for determining the patency of the fallopian tubes by the introduction of carbon dioxide gas, under pressure, through the uterus. If the gas flows freely, patency is established, and the resulting pneumoperitoneum is utilized by making roentgenograms which clearly show the condition of the pelvic organs. This procedure also frequently relieves relative or temporary sterility.

In the clinic of Dr. Charles L. Mix, of Mercy Hospital, he brings out the fact that mucous colitis is a disease which occurs only in patients whose emotional state is disordered, and that no amount of treatment directed to the colon will produce a cure unless the emotional state can be corrected. He relates an interesting illustrative case.

This series, as a whole, is of the utmost practical value to every physician, especially those who are denied the opportunity to obtain clinical instruction in our medical centers.

DIABETES

New Views on Diabetes Mellitus. By P. J. Cammidge, M.D., (Lond.) and H. A. H. Howard, B. Sc. (Lond.) London: Oxford Medical Publication. 1923. Price \$6.50.

The Pathology and Treatment of Diabetes Mellitus. By George Graham, M.A., M.D., F.R.C.P. London: Oxford Medical Publication. 1923. Price \$2.00.

A Diabetic Manual for the Mutual Use of Doctor and Patient. By Elliott P. Joslin, M.D. Illustrated. Third Edition, Thoroughly Revised. Philadelphia and New York: Lea & Febiger. 1924. Price \$2.00.

Management of Diabetes. Treatment by Dietary Regulation and the Use of Insulin. By George A. Harrop, Jr., M.D. New York: Paul B. Hoeber. 1924. Price \$2.00.

Diabetes. A Handbook for Physicians and Their Patients. By Philip Horowitz, M.D. Illustrated. Second Edition Revised and Enlarged. New York: Paul B. Hoeber. 1924. Price \$2.00.

The advent of insulin has caused a renaissance of interest in diabetes, and many new books on the subject are appearing, all of which contain matter which is of interest to those who are handling such cases.

Of the five books noted above, that by Cammidge and Howard is the most complete and authoritative, dealing exhaustively with the technical problem of the biological chemist and going into full details of research work. Treatment also comes in for a like exhaustive consideration.

The works by Graham and Horowitz also cover the whole subject of diabetes, but in a much briefer and less technical manner.

Harrop's book deals with treatment only, in a simple and practical manner; while the "Manual", by Joslin, is intended to be placed in the hands of the patient, in order to secure his full and intelligent cooperation with his physician.

BICKHAM: "OPERATIVE SURGERY"

Operative Surgery. Covering the Operative Technic Involved in the Operations of General and Special Surgery. By Warren Stone Bickham, M.D., F.A.C.S. In six volumes. Vol. V. Philadelphia and London: W. B. Saunders Co. \$10.00 per volume.

In the fifth volume, Bickham presents the operative technics upon the colo-recto-anal tract, the kidneys and suprarenal bodies, the ureters, the bladder, the male urethra, the penis, the scrotum, the testicles and the spermatic cords and adjacent structures, in nine chapters, each of which is brilliantly conceived and organized and equally well written. From the scope of this volume, it can be seen that there is sufficient variety to

interest the occasional operator as well as the specialistic surgeon.

To illustrate our point, we need but invite attention to the chapter, a section of which discusses the treatment of hemorrhoids. No textbook or monograph on diseases of the rectum, that has so far been published, gives more information than the present volume, for every known operation has been treated separately and critically, as is the case throughout the book.

The operations on the urethra and testicles are beautifully illustrated, conveying, in addition to the written text, graphic hints of the difficulties likely to be encountered and overcome.

We greet an old friend and acquaintance in this volume—the subcutaneous ligation for the cure of varicocele, and wonder what it can have done to have reacquired surgical citizenship, for we have abandoned it long since to sleep the eternal sleep of the prematurely born—but, as we read its character, we find that it is inferior to the open operations and that even if a specially careful man were to use it he would never know whether he actually produced occlusion of the veins and, in addition, no one is sure that the cord or, worse yet, an artery is not caught in the ligature—*enfin*, our old friend has been condemned to remain dead and not to be resuscitated.

Here you have an example of the completeness of the book and the separation of the historical from the modern and practical.

Again, we are proud of this addition to American surgical scholarship!

G. M. B.

BESANT: "EVOLUTION OF LIFE AND FORM"

Evolution of Life and Form. By Annie Besant (President of the Theosophical Society). Four Lectures Delivered at the 23rd Anniversary Meeting of the Theosophical Society at Adyar, Madras, 1898. Third Edition. London: Theosophical Publishing House. 1918. Price \$1.25.

We are under the impression that there may be those among our readers who take as much joy as we do in pursuing the highways of scientific investigation beyond the boundaries usually set, and on this assumption we will, from time to time, review a book dealing with metaphysical subjects.

The present volume is a textbook for rather advanced students of metaphysics.

In the first chapter it deals with the

of the orient and that of the occident, viz.: fundamental difference between the science that while the former devotes its time and energies to the study of the *life* which inheres in all things, the latter concentrates on the study of the *forms* through which this life manifests itself.

The second chapter deals with the functions and duties of the physically invisible beings who control and direct the various phenomenon of the universe.

The third and fourth chapters consider the processes by which life becomes manifest in forms and by which the forms progress to higher and higher levels of perfection.

The point is stressed throughout that it is the inherent life which evolves first, and that the form is improved solely for the purpose of giving a larger and fuller expression of the character and amount of the life within.

MOORE: "ANTHOLOGY"

Readers who could not obtain the limited edition of "An Anthology of Pure Poetry," edited by George Moore, which was sold out before publication, will be pleased to learn that the publishers, Boni and Liveright, are issuing a trade edition, in February, which will sell for \$2.00.

PHYSIOTHERAPEUTIC LECTURES

Lectures on Electro-Physiotherapy, October 15 to 19, 1923 at the Logan Square Masonic Auditorium, Chicago, Ill. Held under the auspices of H. G. Fisher & Co., Inc. 1924.

BORCHARDT: "KONSTITUTIONSLEHRE"

Klinische Konstitutionslehre. Ein Lehrbuch für Studierende und Ärzte. Von Dr. L. Borchardt. Berlin und Wien: Urban & Schwarzenberg. 1924.

RAIMANN: "PSYCHOANALYSE"

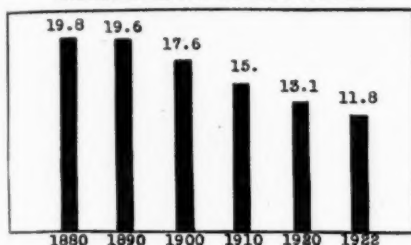
Zur Psychoanalyse. Von Prof. Dr. Emil Raimann. Berlin und Wien: Urban & Schwarzenberg. 1924.

HEGNER & TALIAFERRO: "HUMAN PROTOZOOLOGY"

Human Protozoology. By R. W. Hegner, Ph.D., and W. H. Taliaferro, Ph.D., Associate Professor of Protozoology in The Johns Hopkins University. Illustrated. New York: Macmillan. 1924. Price \$4.00.

Medical News

DECREASE IN DEATH RATE



This graph shows what the general death rate was in the U. S. registration area at the opening of each decade since federal mortality records have been kept. The rate for 1922, the most recent available, is also shown. The line for 1922 is 40 percent shorter than that for 1880.

Illinois Health News, Dec. 1924.

PEDIATRIC NUMBER

The *Medical Review of Reviews* will devote its entire April issue to articles on pediatrics. This number will be edited by Dr. Frank Howard Richardson, of Brooklyn.

DR. EUGENE S. TALBOT

A severe loss to the medical profession in general and to the specialty of Stomatology in particular resulted from the death, on December 20, 1924, of Dr. Eugene S. Talbot, who, for many years has been a leader in the country's medical activities and a large contributor to our professional literature.

PROF. JOHN I. HUNTER

The scientific world has been recently shocked to learn of the untimely death of Dr. John I. Hunter, Professor of Anatomy in the University of Sydney, N. S. W., Australia.

At the age of 23 years, Hunter was made associate professor of anatomy at Cambridge, and a year later was offered the chair of anatomy at Sydney.

During his short life (he was under thirty at the time of his death), he accomplished an extraordinary amount of original and

significant research work in various fields, and was regarded by the leaders of scientific thought, in this country and in England, as the most promising anatomist and, possibly, the largest figure in scientific medicine of this generation.

CIVIL SERVICE EXAMINATIONS

Application may be made to The Civil Service Commission, Washington, D. C., until June 30, 1925, for examinations for the positions of Junior Medical Officer, Assistant Medical Officer, Associate Medical Officer, Medical Officer and Senior Medical Officer.

Successful applicants may be assigned to the Indian Service, Public Health Service, Veteran's Bureau, etc., and salaries range from \$1,860 to \$6,000 per year.

STANDARDIZATION OF SERA

The health committee of the League of Nations is working out plans for world-wide standardization of serums and antitoxins.

When this is done, it will make the work of foreign authorities on these lines more easily understood by American physicians.

TWO LOCATIONS

We are informed of two places, one in the East and one in the West, where physicians are badly needed. If interested write to The G. H. Franklin Estate, Hightstown, New Jersey; or to F. B. Kargleder, White Rock, South Dakota.

We are familiar with Hightstown, which is a thriving village within an hour, by train, of New York or Philadelphia.

White Rock is described as "a small western town."

DR. NORMAN BRIDGE

A large number of physicians who had the privilege of receiving instruction from Dr. Norman Bridge, during the years when he was teaching, both in Chicago and in California, will feel a sense of personal bereavement in learning of his death in Los Angeles, on January 10, 1925.

Dr. Bridge's fortune of several millions of dollars, made, chiefly, by early invest-

ments in western and Mexican oil interests, will, after the death of his wife, be equally divided between the medical departments of the University of Chicago, the University of Southern California, and three other institutions, for the purpose of assisting advance in medical education.



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COLUMBIA-PRESBYTERIAN MEDICAL CENTER

The photograph shows the first spadeful of earth turned in the beginning of construction of the Columbia-Presbyterian Medical Center which is at 168th Street and Broadway, New York. Edward S. Harkness is breaking ground, attended by William Barclay Parsons, Mr. Rogers and Otto Eidlitz, architect.—January 31, 1925.

STANDARDIZATION OF INSULIN

A new method for the standardization of insulin has been devised, which has revealed the fact that there is a very considerable variation in the potency of commercial supplies of this important substance.—*U. S. Public Health Reports*.

HEALTH CERTIFICATE BEFORE MARRIAGE

With the passage of the Ducros Bill, Louisiana joined the ranks of the states requiring a man to present a certificate, from a licensed physician, that he is free from venereal or other constitutional disease, before he can obtain a marriage license.

Among the other states which have passed such laws are: North Carolina, Oklahoma, Pennsylvania, Indiana, Michigan, Oregon, Alabama and Utah.

EDUCATION IN PHARMACY

Beginning in 1926, applicants for admission to the pharmacy courses in New York Colleges must have had two years of drug-store experience in addition to being high school graduates. This ruling of the New York State Regents was cited as one typical view of the problem of pharmaceutical education. On the other hand, the state of Virginia has adopted a theory that all necessary training for the practice of pharmacy may be acquired at a college of pharmacy. Reciprocity agreements are being built up among the states with the result, it was said, that standards are being raised.

CLEARING HOUSE FOR PHARMACY

More than \$400,000 of the \$1,000,000 required to establish a national clearing house for pharmacy has been raised, it is announced by the American Pharmaceutical Association, which is directing the movement under the chairmanship of Dr. H. A. B. Dunning of Baltimore.

NARCOTIC LAW

Now and then, we have letters from doctors who seem to be having trouble in interpreting the Narcotic Law, and one or two have suggested that we publish an article on the subject.

An article on the Narcotic Law would be a cumbersome thing to handle, and most doctors seem to be familiar with it; but, if anyone who is having any trouble will write to us, we will be glad to answer his specific questions in detail.—EDITOR.

WESTERN PHYSIOTHERAPY ASSOCIATION

The Seventh Annual Meeting of the Association will be held at the Little Theatre, Kansas City, Mo., on April 16 and 17, 1925. This will be preceded by the Seventh Session of the Western School of Physiotherapy, from April 9 to 15.

Information may be obtained from Dr. C. W. Fassett, 115 E. 31st Street, Kansas City, Mo.

Send for This Literature

To assist doctors in obtaining current literature published by manufacturers of equipment, pharmaceuticals, physicians' supplies, foods, etc., CLINICAL MEDICINE will gladly forward requests for such catalogues, booklets, reprints, etc., as are listed from month to month in this department. Some of the material now available in printed form is shown below, each piece being given a key number. For convenience in ordering, our readers may use these numbers and simply send requests to this magazine. Our aim is to recommend only current literature which meets the standards of this paper as to reliability and adaptability for physicians' use.

Both the literature listed below and the service are free. In addition to this, we will gladly furnish such other information as you may desire regarding additional equipment or medical supplies. Make use of this department.

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| <p>O- 22 Biological Products for Human Use. With Indications for Use, Dosage, Price List, etc. Gilliland Laboratories.</p> <p>O- 30 Helping the Cell to Help Itself. 32-page booklet. The Alkalol Co.</p> <p>O- 34 The Care and Feeding of Infants. 60-page booklet. Mellins Food Co.</p> <p>O- 51 Treatment of Syphilis. 32-page booklet. Dermatological Research Laboratories.</p> <p>O- 58 A Symposium on Yeast. 24-page booklet. The Fleischmann Co.</p> <p>O- 65 Intestinal Infections of Children. 14-page booklet. Battle & Co.</p> <p>O- 69 Gonosan. 4-page folder. Riedel & Company.</p> <p>O- 71 Goiter Special. 4-page folder. Columbus Pharmacal Co.</p> <p>O- 80 Allonal "Roche." The Non-Narcotic Hypnotic and Analgesic. 8-page booklet. Hoffman-LaRoche Chemical Co.</p> <p>O- 84 Storm Binder and Abdominal Supporter. 4-page folder. Dr. Katherine L. Storm.</p> <p>O- 92 New Light on an Old Remedy. 12-page booklet. Century National Chemical Co.</p> <p>O-103 Therapeutic Use of Chlorine in the Treatment of Respiratory Infections. No. 61. 8-page folder. Wallace & Tiernan.</p> <p>O-104 Petrolagar (Deshell). What It Is. 8-page booklet. Deshell Laboratories.</p> <p>O-134 Chinosol—Non-Poisonous Antiseptic. 32-page booklet. Parmele Pharmaceutical Co.</p> <p>O-160 Clinical Reports on Cito. 8-page booklet. Chlorine Products Co.</p> <p>O-194 Ninth Edition of Electro Surgical Instrument Co. catalogue. 80 pages.</p> | <p>O-198 Pluto Water. Its Medicinal Values. 16-page booklet. French Lick Springs Hotel Co.</p> <p>O-207 McDannold Surgical and Gynecological Chair. Descriptive folder. A. McDannold.</p> <p>O-211 Fibrogen. 8-page booklet. Wm. S. Merrell Co.</p> <p>O-217 A Modern Reconstructive Tonic. 4-page folder. Carroll Dunham Smith Pharmacal Co.</p> <p>O-220 Diet Series. Constipation. 4-page folder. Kellogg Company.</p> <p>O-231 Instant Relief for Cold in the Head and Sore Throat, Hayfever and Summer Colds. 4-page folder. Schoonmaker Laboratories.</p> <p>O-233 The New Antiseptic Dye Acriflavine. 12-page booklet. Pitman-Moore Co.</p> <p>O-235 Constipation, Its Rational and Physiological Treatment. 4-page folder. Wm. R. Warner & Co., Inc.</p> <p>O-237 Information for the Medical Profession about Bovinine. 36-page booklet. The Bovinine Company.</p> <p>O-238 Ethical Medicinal Specialties. 8-page booklet. A. H. Robins Co.</p> <p>O-239 The Treatment of Sexual Impotence. 16-page booklet. Astor Chemical Corp.</p> <p>O-243 Useful Information for the Nurse. 24-page booklet. Chas. H. Phillips Chemical Co.</p> <p>O-249 A Sinusoidal Manual, by T. C. Cornell, M.D. 54-page booklet. McIntosh Electrical Corp.</p> <p>O-255 Lunosol, by Herman Hille, Ph.D. 16-page booklet. Hille Laboratories.</p> <p>O-261 Causes and Effects of Pyorrhea. 32-page booklet. Dentinol & Pyorrhoeicide Co., Inc.</p> <p>O-265 Diatussin in Pertussis Bronchitis Asthma. 4-page folder. Ernst Bischoff Co., Inc.</p> |
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- O-271 Pharmaceutical Preparations of Established Merit. 11-page booklet. E. Bilhuber, Inc.
- O-293 Clinical Data and Case Reports on the Intravenous Infection of Calcium in the Treatment of Tuberculosis. New York Intravenous Laboratory.
- O-369 Doctor—This is for you. 4-page folder. Andron Hygienic Co., Inc.
- O-370 The Growing Scope of the General Practitioner in Special Therapy. 13-page booklet. Battle & Co.
- O-371 Deep Therapy Lamp Perfected. 4-page folder. Burdick Cabinet Co.
- O-372 Malnutrition Sero. 4-page folder. Calif. Endocrine Found. Labs.
- O-373 The Journal of Organotherapy, February, 1925. 30-page booklet. G. W. Carnrick Co.
- O-374 Further Observations on the Specific Action of Testogan and Thelygan, Iwan Block, M.D. (Berlin), Third Communication. 8-page booklet. Cavendish Chemical Corp.
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- O-377 Dry Milk in Infant Feeding by Roger H. Dennett, B.S., M.D. 8-page booklet. Dry Milk Co.
- O-378 The Heart and its Disorders. 36-page booklet. Fellows Medical Mfg. Co., Inc.
- O-379 Diathermy in the Treatment of Genito-Urinary Diseases, with Especial Reference to Carcinoma, by Budd C. Corbus, M.D., F.A.C.S. and Vincent J. O'Connor, S.B., M.D. H. G. Fischer & Co.
- O-380 Nativelle's Crystallized Digitaline. 8-page booklet. E. Fougera & Co.
- O-381 The Quartz Lamp, February 1925. 10-page booklet. Hanovia Chemical & Mfg. Co.
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- O-383 Horlick's Malted Milk, Analysis, Weight and Caloric Value Chart. Horlick's Malted Milk Co.
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